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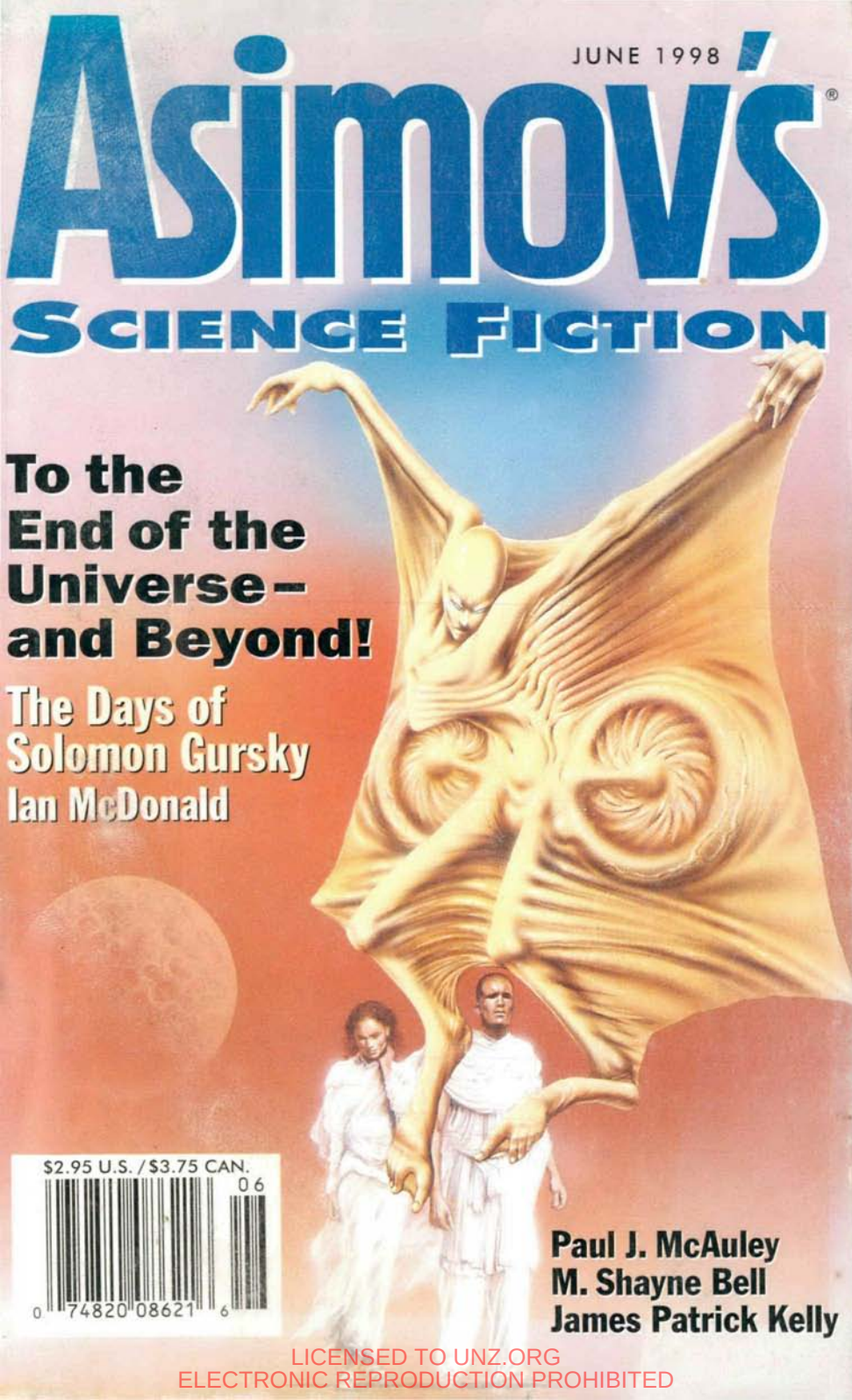

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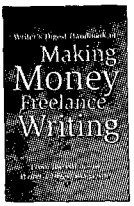

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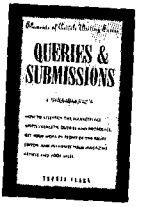

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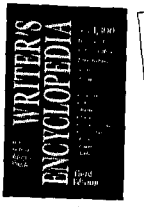

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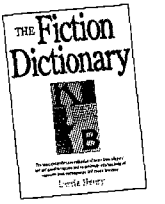

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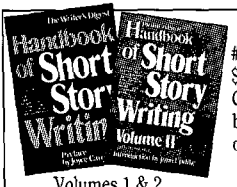

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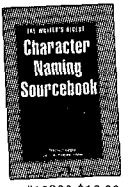

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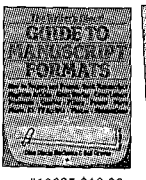

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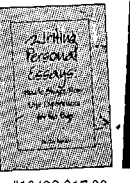

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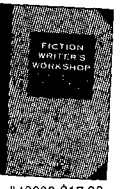

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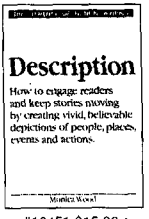
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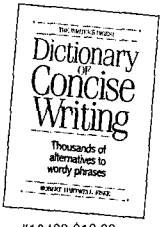

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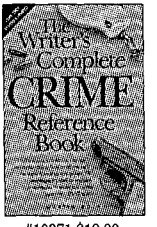

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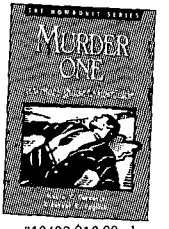

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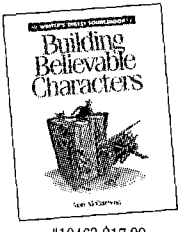

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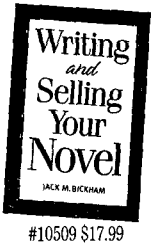

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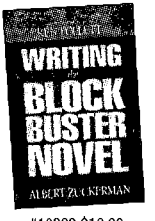

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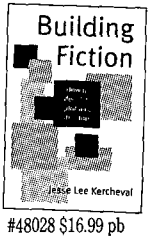

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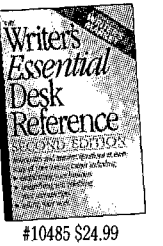

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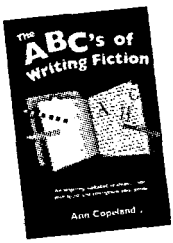

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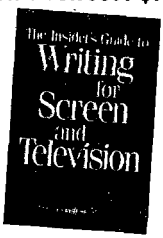

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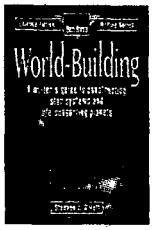

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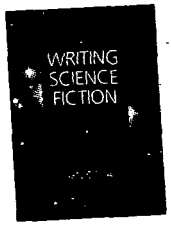

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June 1998

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Asimov's was also the 1996 recipient of the *Locus* Award for Best Magazine.

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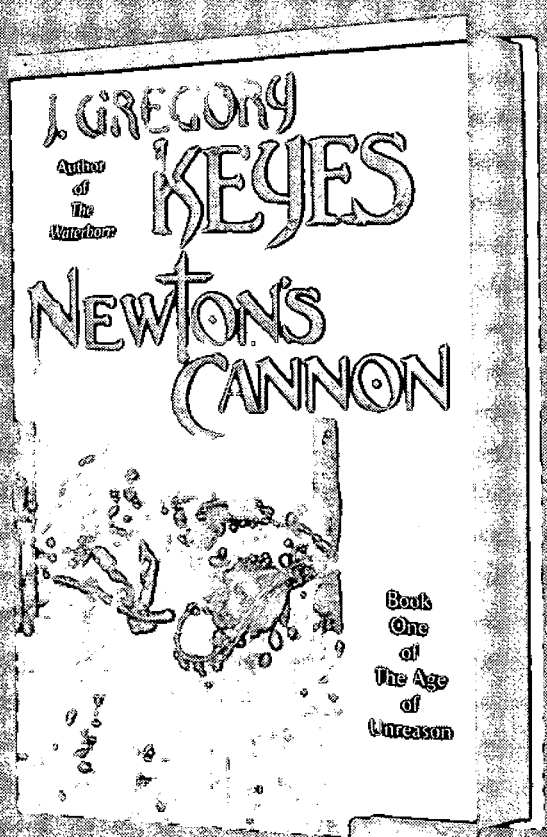

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EDITORIAL

Gardner Dozois

Well, with this issue, changes have once again come to *Asimov's Science Fiction* magazine, but—unlike the death of Isaac Asimov and Baird Searles a few years back—these are positive changes, changes that we're enthusiastic about and that we think will help to ensure our health and viability as we stand on the brink of entering the new century.

The first and biggest change—in all meanings of the word!—ought to be obvious to you already, presuming that you've picked up the magazine, as you must have in order to be reading these words in the first place: After twenty years as a "digest"-sized magazine, we've changed our size. The magazine has gotten bigger.

From now on, every issue will be more than an inch taller and a quarter-inch wider than it used to be; the number of pages per issue will go down from 160 to 144 for regular issues, and from 288 to 240 for double issues, but—and it's a very important "but"—the fact that the pages are larger means that we will be able to use about 10 percent more new material in each issue than we used to be able to . . . so that from now on our issues will be larger than they have been in every way, not only a larger format, but more new material per issue as well!

With larger pages, we can jam even more high quality fiction and nonfiction into each issue than was previously possible—and *Asimov's Science Fiction* is already one of the best reading bargains, more material for less money, that you can find anywhere in the genre today . . . especially when you consider the quality of the material we bring you, unrivaled anywhere, good enough so that stories from *Asimov's* have won twenty-nine Hugo Awards and twenty-three Nebula Awards, as well as World Fantasy Awards, Theodore Sturgeon Awards, and HOMer Awards, and *Asimov's* itself has won the prestigious *Locus* Award for Best Magazine of the Year for an unprecedented ten years in a row.

In addition to being able to bring you more material per issue for your money, we're enthusiastic about this change, because we hope that the increase in size will increase our visibility on the newsstands (where, at the moment, digest-sized titles tend to get lost because other, larger magazines are shuffled in front of them), increase our attractiveness as a product to distributors (who tend to favor larger-format magazines over digest-sized magazines), and in general help to prepare us to enter our third decade of life—and the new century just ahead.

Yes, that's right, I said our third decade of life, for although it seems like only a little while ago that I helped produce the very first issue of *Asimov's Science Fiction*, it was actually all the way back in 1977, and twenty years have passed since then! So to honor our Twentieth Anniversary, with an eye to the future, we are initiating another big change, experimenting with a brand-new media. We are expanding into the online world. With the invaluable help of John O'Neill and Rodger Turner from SF.SITE, who've worked like mine slaves getting this prepared, we've set up an *Asimov's Science Fiction* Internet website. We can be found at

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http://www.asimovs.com—or you can link to us from www.sfsite.com, the SF.SITE home page.

Next time you're surfing the net, check us out at our online home for exciting story excerpts from upcoming issues, book reviews, online interviews and chats with your favorite writers, Isaac Asimov's famous Editorials, Robert Silverberg's controversial Reflections, Norman Spinrad's acclaimed critical essays, reprints of classic *Asimov's* stories, cartoons, puzzles, letters, and special features—including complete new stories—available only online at the website. You can even subscribe to *Asimov's* in its usual monthly print incarnation with only the click of a few buttons, and no cut-out coupons or envelopes or stamps (or trips to the post-office through the rain or the snow!) required—with special rates available for online subscriptions. You can also vote for next year's *Asimov's* Readers Award poll online, again with no stamps or envelopes, muss or fuss required. So check us out online—we think you'll like what you see!

And in honor of our new *Asimov's* Internet website, this issue features the debut of a new column, one that will be appearing here from time to time, as the intrepid **James Patrick Kelly** sets out with gun and camera—or with mouse and modem, anyway—to explore the vast jungles and impenetrable thickets of the Internet in search of websites of interest to SF readers, and to generally keep an eye out for Cool Things that you can do while you're online. Kelly's column is called "You Can Get Everywhere From Here," and we think you may find it useful—and, more importantly, enjoy it!

So, that's all of our changes for the moment. Look, the twenty-first century looms ahead! Brace yourself for impact! Ramming speed! We're going to plunge right into that thing—all guns blazing! ●

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REFLECTIONS

by Robert Silverberg

THE SCIENCE-FICTIONIZATION OF EVERYTHING

For a few dazzling weeks last summer it seemed as if science fiction had engulfed the world. The front page of The New York *Times* began to look like an outtake from a 1949 issue of *Thrilling Wonder Stories* or *Astounding Science Fiction*. So many fantastic things were going on at once that my mind reeled with present shock.

Consider all this:

—The Pathfinder went to Mars, and sent its cute and nifty little Rover scuttling around bumping into rocks with names like Barnacle Bill and Ender, while television cameras sent back live pictures of the rugged Martian landscape.

—Meanwhile, the Russian crew of the vast, spidery-looking Mir space station, up there in orbit around the Earth, was stumbling around from one comic-opera mishap to another.

—Off in Roswell, New Mexico, the fiftieth anniversary of the alleged crash of an unidentified flying object with a crew of extra-terrestrials aboard was celebrated with all manner of solemn and loony pronouncements about the significance, or lack thereof, of the event.

—A satellite trailing the space shuttle Discovery came up with evidence that supports a much-disputed theory that the Earth's atmosphere is constantly being bombarded by snowballs as big as houses.

—A team of scientists from the University of Munich announced that they had succeeded in retrieving and deciphering a strip of DNA from fossil Neanderthal bones, and were able to demonstrate, by comparing their sample to modern human DNA, that the Neanderthals had been a separate branch of the human race, having diverged from the line of hominid evolution hundreds of thousands of years ago.

—From various points around the country came the news that Dolly, the famous cloned sheep whose existence had been revealed early in 1997, had now been joined by an assortment of other cloned barnyard critters, with many more to come.

—A Japanese electronics firm demonstrated its first walk-around robot, stolidly clunking up and down the stairs looking for all the world like the latest positronic job dreamed up by Isaac Asimov's great roboticist Susan Calvin.

—It began to seem as though the movie houses of the nation were forbidden to show anything but science fiction films, what with *Men in Black, Contact,* and *The Lost World* playing simultaneously.

All this, you understand, against a constant drumbeat of Internet developments, promotional news about the coming era of digital television, advertisements for do-it-yourself paternity testing with home DNA kits, and other routine technological razzmatazz, 1990's-style.

Well, so what, you say? It's *all* routine news, isn't it? Space stations have been orbiting the Earth for a long time now, and unmanned landings on Mars were accomplished back in the 1970s, and there's nothing new about science fiction films, and if comets can come our way, why not space snowballs as well, and even cloning has been in the development stages for a while, and in any

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case it's all just the latest science stuff, so what's the fuss? Science does keep marching on, you know.

Yes. So it does. And we get a little jaded as the procession of miracles marches on and on.

But look at it from my point of view, will you? I'm in my sixties now, which means I'm older than most of the readers of this magazine, and a lot older than some. I've been reading science fiction for more than fifty years and writing it professionally for more than forty. I've lived with such concepts as cloning and DNA analysis and space stations and missions to Mars since I was a kid; and they were science fiction then.

Now they aren't. They're the stuff of daily news, things that too many of us take for granted. I can't. Especially when such an enormous spate of startling news—news that still seems like bulletins out of the future to somebody like me—hits with such a great rush.

The bewildering simultaneity of all the SF headlines of the summer of 1997 left me shaking from the impact of seeing all that formerly wild stuff now unfolding on all horizons at once. I'm old enough, after all, to remember when commercial jet aircraft and color television sets were items that you encountered only in the pages of science fiction magazines, when computers were called "thinking machines" and one with very modest computing capacity needed enough space to fill a big laboratory, when heart transplants and the reattachment of severed limbs and remote-control microsurgery were the stuff of wild speculation. So were space satellites and atomic bombs.

I've lived long enough, now, to see all these fantastic notions perfected and turned into the innate essence of our daily mundane reality. I remember the struggle to get the first wobbly little space satellite into orbit. I remember, too, the day the first atomic bomb was dropped on Hiroshima. The first tape recorders (and then the first video recorders), the long-playing record (and the even more miraculous CD), the initial flight of the Boeing 707, the coming of the Apple II computer, the video recorder, wonder after wonder, amazement after amazement—I lived in a world where none of those existed, and one by one I watched them arrive. And I've tried to absorb them casually, like the forward-looking science-fictionist I've been for most of my life: simply nodding with quiet pleasure at each stunning announcement and saying, "Yes, yes, Heinlein wrote about that one in 1942, or was it Asimov in 1948?"

But even as I was applauding all that gratifying transformation of science fiction into science fact, I wondered how older people were reacting to it—my father, for example, who was born in 1901, at a time when the airplane itself had not been invented, when radio was still unknown, when even the sight of an automobile on the streets was a rarity. He lived on into the time of color television sets and wide-bodied jet airliners and astronauts prancing around on the moon. But could he make sense of it all? Didn't he feel sometimes that he had wandered into one of those wild stories for which publishers unaccountably paid his son so much money?

And now it's my turn. The miracles haven't ceased—they come ever thicker and faster—and my smug "I told you so" attitude of thirty or forty years ago is turning, with age, to a kind of bewildered awe at the enormity of it all. Something like the summer of 1997, with its ubiquitous science-fictionalization of the news, makes me feel as if I've wandered into one of my own stories of two or three decades ago. (Although those stories seem terribly conservative

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now! And so do everybody else's. The other day I flew from San Francisco to New York, watching people all around me in the plane concocting elaborate charts and diagrams in full color on their lap-top computers, or blithely sending off E-mail to Pakistan or Uruguay right from their seats. Where is the science fiction story of 1970 vintage, or even 1980, that showed us any such scene in a story set in 1997?)

Ah, you say. Poor old Silverberg: he's gone stiff and creaky with age. He can't get over the fact that a lot of the stuff that he read about when he was a kid, and wrote about a few years after that, has now come true. His ossified imagination can no longer handle even such run-of-the-mill events as television pictures from Mars and the retrieval of Neanderthal DNA. And so it takes only a handful of news items of the sort we got last summer to send him over the edge, babbling about how he finds himself living inside a science fiction story.

Maybe so. But I have two rejoinders to make.

The first is one that I borrow from my good friend Robert Sheckley, who uttered some memorable words about aging in the introduction to his 1979 short-story collection, *The Wonderful World of Robert Sheckley*. He was just entering his fifties then, and said, "The current audience for science-fiction is a young person's audience. I am not a young person, curse the luck. I was writing these stories when a lot of you weren't even born yet, or were crapping your diapers. Please don't hold that against me. I don't like being old any more than you will."

I don't like being old any more than you will. What a wonderful line, and what a marvelous sting is packed into that final word! Because getting old happens to everyone who doesn't happen to die young. I was once a smart-alecky kid dreaming of voyages to Mars, and now I'm a crochety oldster who gets all rattled when too much of that science-fictiony stuff turns to reality at the same time. And—if you're lucky, and last as long as I have—the same thing is going to happen to you. You, who were on the scene when everybody suddenly began babbling "http://" and "www" and got right out there with your own home page, will be eventually left high and dry by the advent of do-it-yourself nanosurgery or edible telephones or wireless thought transmission, and will go around blinking and shaking your head and muttering about how goddamned *fast* the pace of progress is getting these days. Mark my words, you will. And you won't like that feeling of being a back number any more than I do.

The other point is that I think it's absolutely legitimate and proper for me to be blown away by a string of science-fictional headlines about trips to Mars and Neanderthal DNA and all the rest of the wonders that so bemused and astounded me in the summer of 1997. I was drawn to science fiction in the first place because I passionately cared about all those fantastic things and many more besides, and yearned with all my heart to live long enough to see them turn into reality. The day I start reacting coolly and indifferently to the sight of a foot-high six-wheeled gizmo scooting around amidst the sands of Mars is the day I put my cherished file of half-century-old copies of *Astounding Science Fiction* out for the next Goodwill Industries pickup and totter off toward that rocking chair on the porch. ●

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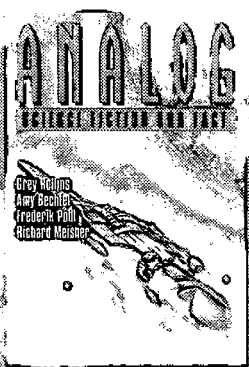

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You Can Get Everywhere From Here

James Patrick Kelly

Start

This is only a test

Complete the following sentence.

The net:

a) is the most important communication medium since television.

b) is the most frustrating technology since the programmable VCR.

c) will promote a new world order.

d) is science fiction.

Science fiction? Well, something like. You see, there's worldbuilding going on in the great digital everywhere, and it's happening on a scale far grander than anything Ursula K. Le Guin or Jack Vance or Frank Herbert or even the Good Doctor ever attempted. Millions of people are using net technologies to invent this new world, right before our eyes. The net has a geography, its own culture. People meet there, buy stuff, argue, fall in love. Timothy Leary died on his own web page, which died shortly thereafter. And yet none of it is real, just like the stories in this magazine. Sure, we call it virtual, but isn't that just a cyberword for made up? The world that is the net is made up, just like Genthen, Big Planet, Arrakis, and Trantor. See what I mean? But the real reason I like to think of the net as science fiction is that, useful and fascinating as it is right now, it hasn't really happened yet.

Under construction

If the net had a logo, it would have to be the ubiquitous *under construction* gif. The virtual jackhammers run twenty-four hours a day. And it's not only the sites that are under construction; the browsers are constantly being renovated, too. If there's anything that we can be certain of, it is that the net we marvel at in the late nineties will soon seem as quaint and clunky as the text-only bulletin boards of the late eighties.

Yes, my boy, when I was your age, we had to type our e-mail and read it ourselves. And there was no video.

Grandpa Kelly, what's type?

Not only is the net under construction but it can also be agonizingly slow; they don't call it the World Wide Wait for nothing. Many of the truly cutting-edge sites take forever to load. New technologies to speed things up—and thus allow the net to reach its potential—exist today, but they cost an arm and three fingers. A mature net will have bandwidth to beat the band.

And a mature net will work 99.7 percent of the time. It'll be there when you call it and it won't show you the exit before you're ready to leave. Last week, my modem refused to log on for two days. I spent several frustrating hours making long ^#%$&#! distance calls to my Internet service provider's tech support line. I changed setup values, fiddled with initialization strings and logon scripts many, many times. Nothing worked. Finally, the tech rep just gave up. He claimed there was nothing more he could do, that maybe I should bother the modem manufacturer for a while. I went downstairs, ate a banana, cursed Bill Gates, Marc

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Andreesen, Alexander Graham Bell, and all their progeny, came back to my computer and tried one more time to go online. *Bingo*! And it's been working ever since—knock on silicon. Understand that I have no idea how the problem got solved. I might as well have sacrificed a chicken to the gods of Netscape.

I bring this up not to complain (well, sort of to complain), but to make the point that whatever it is that we've got now, it isn't the net. Not yet. What we've got is the first paragraph of the first draft of a projected decology.

Folks, you ain't seen nothing yet.

Net Prophets

Or at least, that's what the net prophets say. They claim that cyberspace will bring about the end of civilization as we know it—and not a moment too soon. If you think your favorite writers have some radical ideas about the future, you might want to check out an electronic document called **Cyberspace and the American Dream: A Magna Carta for the Knowledge Age** by noted digerati Esther Dyson, George Gilder, George Keyworth, and Alvin Toffler (*www.frc.org/pff/position.html*). Although this manifesto staggers under the heavy burden of Tofflerspeak, it does repay the effort you'll expend reading it.

According to these pundits, "More ecosystem than machine, cyberspace is a bioelectronic environment that is literally universal." The way they see it, the march of progress must necessarily squeeze through your modem. "Cyberspace is the land of knowledge, and the exploration of that land can be a civilization's truest, highest calling. The opportunity is now before us to empower every person to pursue that calling in his or her own way."

In fact, they predict not just one, but many revolutions. "As humankind explores this new 'electronic frontier' of knowledge, it must confront again the most profound questions of how to organize itself for the common good. The meaning of freedom, structures of self-government, definition of property, nature of competition, conditions for cooperation, sense of community and nature of progress will each be redefined for the Knowledge Age—just as they were redefined for a new age of industry some 250 years ago."

And here I thought I'd got on line for the e-mail, the chat, the research and my daily dose of **Dilbert** (*www.unitedmedia.com/comics/dilbert*).

Wasting Time—And Proud of It!

The other day I had dinner with a writer pal, **Alexander Jablokov** (*www.sff.net/people/Jablokov*), and we got to comparing net habits. He claimed that the only time he surfed the net was when he was busy wasting time. He said it was like playing a few hands of computer solitaire before beginning work each day, or taking a midmorning break to open the mail and maybe skim the new *Asimov's*. He asked me how many times I had ever strode into my office and turned on the computer for the sole purpose of logging in and cruising the infobahn. I had to admit that it was not very often. I too use the net largely as a diversion. But then I'm a writer; I'm good at not doing what I'm supposed to.

In any event, here are a few of my favorite web distractions. Check them out at your own peril!

Astronomy Picture of the Day (*antwrp.gsfc.nasa.gov/apod/ap.html*) This is the first site on the net to which our term *sense of wonder* actually applies. APOD is updated daily with a drop-dead gorgeous picture of

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the universe. There is also a brief hypertext explanation of what you're seeing, written by a professional astronomer, but easily understandable by an English major like yours truly. The site's producers, astronomers Robert Nemiroff and Jerry Bonnell, claim that the APOD archive contains the largest collection of annotated astronomical images on the Internet.

Science Fiction Weekly (*www.scifi.com/sfw*) is the best science fiction newsmagazine that's not in print. While it does not yet have the depth to replace a *Locus* or an *SF Chronicle* as your primary genre news source, it continues to improve. Its chief advantage over its print competitors is that it is updated every other week. So why isn't it called **Science Fiction Biweekly**, you ask? Don't. I read it primarily for the news section; the only way to be more up-to-date is to move to New York or LA and do lunch with the movers and shakers. There are also book, movie, and game reviews, an often interesting visit to a Sci-Fi Site of the Week, a revisit to some Classic Sci-Fi and an e-mail to the editors page. Although the site has a definite skew to media SF, it has recently engaged the services of one of SF's most redoubtable literary critics, John Clute. I guess my only quibble is that Science Fiction Weekly has become yet another accomplice in the rehabilitation of that dreadful non-word, *sci-fi*.

The Surrealism Server (*http://pharmdec.wustl.edu/juju/surr/surrealism.html*). If the world is starting to make too much sense to you, maybe it's time for a jaunt over to the Surrealism Server to have your synapses rewired. The surrealists continue to exert a major influence on SF art; their fingerprints are all over the illustrations in this magazine, for example. This glorious bedlam of a site presents not only links to the classic paintings, sketches, and collages, but also wordplay that is every bit as bizarre. For instance, the Surrealist Compliment Generator offered me the following accolade: "Sound barricades itself into rolls of peanut butter when you speak." Not only that, but "You wear your breasts to their full extent, like a man with an uncontrollable bulge in his apartment." Come to think of it, Gardner made the very same comment to me back in 1983.

253 or Tube Theater: a novel for the Internet in seven cars and a crash (*www.ryman-novel.com*). Lots of writers, both professional and amateur, have sites on the web. 253, by award winning SF writer Geoff Ryman, is one of the most ambitious—and best written. Not strictly SF and not exactly a novel, it's something completely different. "Do you sometimes wonder who the strangers around you are?" asks Ryman. "This novel will give you the illusion that you can know. Indeed, it can make you feel omniscient, Godlike." Two hundred and fifty-three people are riding a subway train in London on January 11, 1995; each of them are described in two hundred and fifty-three words. "Nothing much happens in this novel," writes Ryman, with self-deprecating humor. "It is ideal fare for invalids." Except that 253 ends in a crash horrific enough to bounce most invalids right out of their beds. A sequel is promised, to be written by visitors to the site.

Deja News (www.dejanews.com). I use search engines a lot and I hate almost all of them. They're slow and often out of date and not anywhere near as helpful as they ought to be. Deja News is the exception to the rule. It's a gateway to a part of the net that lots of cybersurfers never get around to visiting: the newsgroups of the Usenet. Every day people post 800 megabytes of messages to the multitudinous newsgroups.

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That's the equivalent of 800 door-stop-sized novels. They discuss everything you can think of, including science fiction. A quick query to Deja News turned up newsgroups called *rec.arts.sf.written, rec.arts.sf.tv, rec.arts.sf.marketplace, rec.arts.sf.fandom, rec.arts.sf.movies,* and *rec.arts.sf.misc.* Plowing through them all would take more time than I've got, so I use Deja News to screen the newsgroups. What are people posting about Mars, the *X-Files,* dinosaurs, hard SF, the WorldCon? And is anyone saying anything nice about me?

Exit

It's time for the disclaimer. Lest you think I'm some kind of web wizard, let me confess right now that I am no such person. I'm just a science fiction writer. Three years ago I didn't even own a modem. I take an interest in the net, but I'm afraid a lot of what I see and read zings right over my head. So if you catch me in a mistake, go ahead and write a letter to Gardner and Sheila. Or flame me directly at *jimkelly@nh.ultranet.com.*

I'm not embarrassed to admit I've got a lot to learn. ●

MEET OUR CYBERSPACE CADET

June is a good-luck month for the newest *Asimov's* columnist. Since 1984, fifteen of his stories have appeared in our June issue. One of these, "Think Like a Dinosaur" (June 1995), won the Hugo award. Five of his June tales (including one from a competing magazine) have been finalists for the Nebula award, and three June stories have placed first in the Asimov's Readers' Award Poll—"Think Like a Dinosaur," "Mr. Boy" (June 1990), and "The Prisoner of Chillon" (June 1985). An unpredictable turn of events was his 1990 victory in the Readers' Award Poll for a poem, "A Dragon's Yuletide Shopping List" (co-written with Robert Frazier), which was published in our *December* 1990 issue!

James Patrick Kelly is the author of four novels, *Planet of Whispers, Freedom Beach* (co-written with John Kessel), *Look into the Sun,* and *Wildlife,* and he's published more than fifty short stories. This self-styled "cyberspace cadet's" novelette, "Solstice," was reprinted in Bruce Sterling's classic 1986 *Mirrorshades: The Cyberpunk Anthology.* The ubiquitous "Think Like a Dinosaur" is currently being produced as a radio play for the Internet by Seeing Ear Theater (**www.scifi.com/set**), and it is also the title of the author's short story collection.

In addition to his writing, Jim has been affiliated with the Artists in Education Program for New Hampshire State Council on the arts for over ten years. He has visited over eighty elementary, middle, and high schools to introduce the students to science fiction and fantasy and to encourage them to write it. He, himself, is a two-time attendee of the Clarion Writers' Workshop at Michigan State University. He has taught the workshop four times and will do so again this summer.

An avid gardener, Jim lives with his wife Pam, an employee of the Supreme Court of the State of New Hampshire. They have three lovely children—Maura, Jamie, and John. Readers can find the author at home on his own page at: **www.nh.ultranet.com/~jimkelly**.

—Sheila Williams

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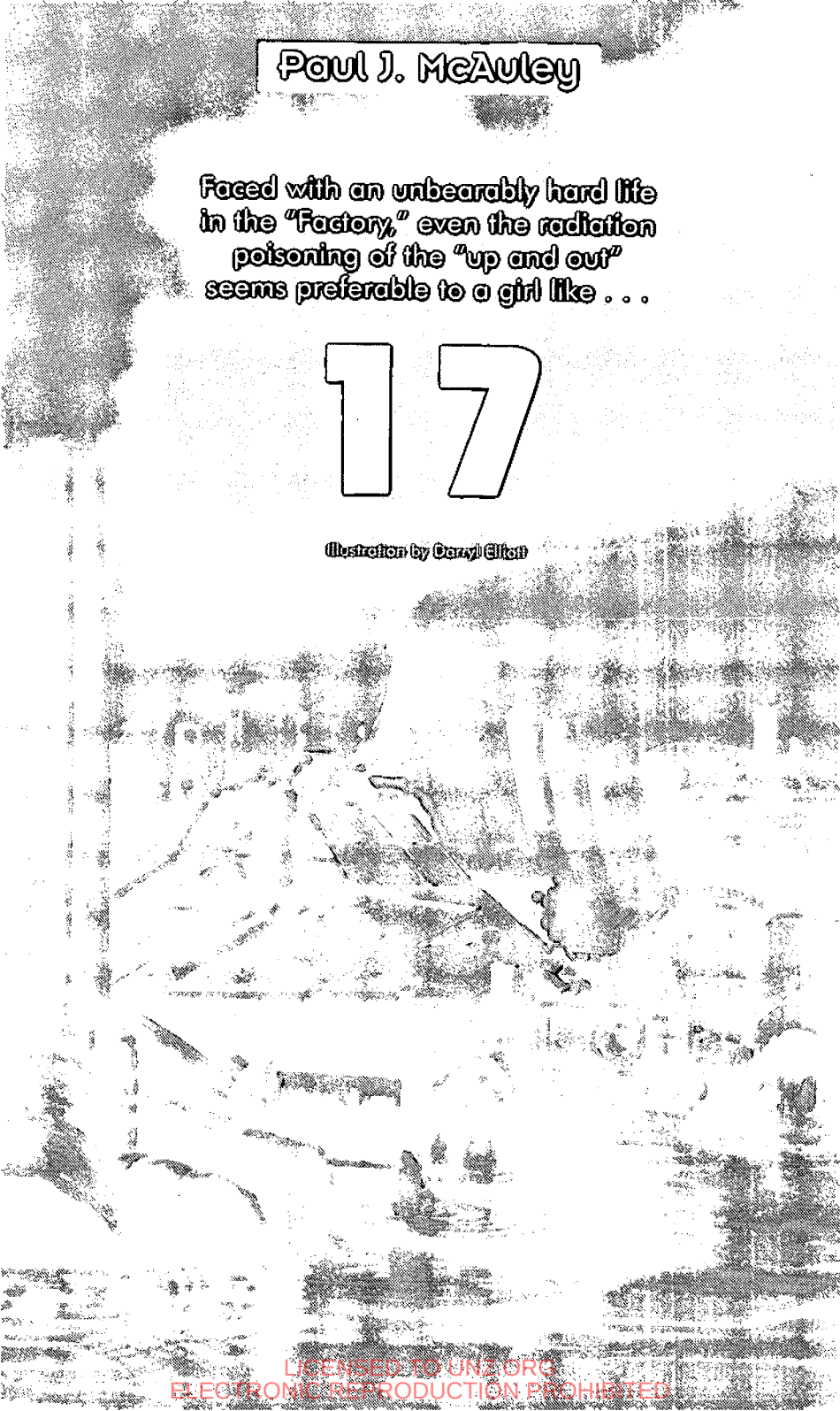
Paul J. McAuley

Faced with an unbearably hard life in the "Factory," even the radiation poisoning of the "up and out" seems preferable to a girl like . . .

17

Illustration by Darryl Elliott



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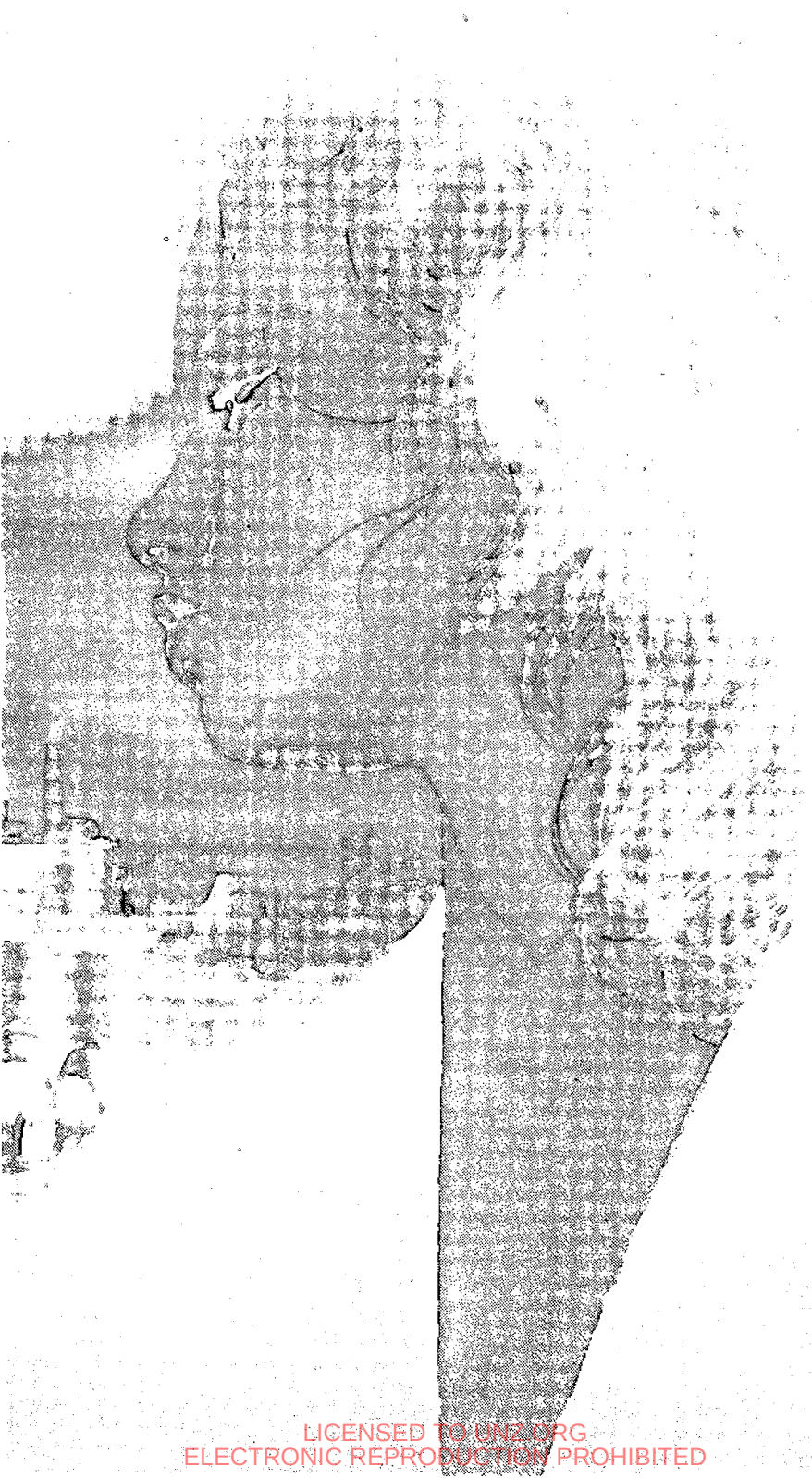

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It seemed to 17 that her family had been laborers in the Factory forever. Her mother claimed that her great-great-great grandparents had worked in the original Factory, and that they had helped in the reconstruction after the One Big One; her most treasured possession was a photo of men and women in rags standing in knee-deep mud in front of a hillside of trees all knocked down in the same direction.

17 had worked since she could walk, when her mother had taught her how to grade waste paper. Then she had cycled with the kids from her rack, chasing heavy metal residues in the flues of the refineries, harvesting mussels in the sewers for their metal-rich shells, sorting through the spill heaps. She had run with the same pack for ten years, had been boss for the last three, but at last she had realized that she wasn't interested in them any more. They were just kids. So she had picked a fight with the next oldest, a lanky boy called Wulf, had beaten him bloody and had told him that he was boss now, and had walked away.

That was last winter. Since then she'd been a free laborer, turning up each day at the canal junction by the cooler stacks and waiting with the others until the shift foremen arrived and made their pick. It was hard, dangerous work. The men went to the refineries or foundries. 17 mostly cleaned the spinners, clever machines that built up hundreds of different things using frames and cellulose spray. The spinners never stopped, their spray heads chattering away right above her while she dug out mounds of stinking cellulose that had accumulated beneath the frames. Blood worms lived in the stuff, thin red whips a meter long that stung bad if they lashed your skin. Rat-crabs too, and roaches, and black crickets.

Her mother disapproved. It was time she settled down, her mother said, time she got herself a man and made babies.

They had terrible rows about it. 17 argued that she could do what she wanted, but she knew that if she stayed a free laborer, sooner or later she'd get hurt. And if she got hurt bad, she'd be sent to work the tanks where wood pulp was dissolved in acid. Most people didn't last long there; fumes ate their lungs, blinded them, ulcerated their skin until gangrene set in. But it was that or ending up as a breeder like her mother, blown up by having kids one after the other, or becoming some jack's troll. She'd already had a taste of that, thanks to Dim, the prime jack of her rack. She'd messed around with the other kids of her pack, but Dim had shown her what real sex was like. She swore she'd kill him or kill herself if he or any other man tried it again.

Then Doc Roberts came, and everything changed forever.

Doc Roberts was ex-Service, come to the Factory to stretch his pension by leechcraft. He rented a shack on the roof of one of the racks at the edge of the quadrant. He filled it with sunlamps and plants and hung out a shingle announcing his rates.

17 went to see him the second decad after he arrived.

"You're not sick and you're not pregnant," Doc Roberts said, after a rough, cursory examination. "Why are you here?"

"You went up," 17 said, staring at him boldly. She had seen him gimping around the market in his exoframe, but he seemed much taller in his little shack. He was very thin inside the frame, like a cartoon stick man. No hair, his scalp seamed with lumpy scars, his face burned brown and leathery; he looked like one of the turtles that swam in the canal by the cooler outlets.

It was hot and steamy in his shack. The glossy leaves of plants shone in

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vivid greens and oranges under the rack of purplish sunlamps. There was a shelf of books over his cot, a toilet connected to a tank of spirulina, a glass-fronted cabinet where he kept his pharmaceuticals.

Doc Roberts said, "I upped and I reupped. More than twenty years, girly. It made me what I am."

"I want to go."

"That's a hard road. Stay in the dirt. Find a man. Have babies."

"No! Kill myself first!" Suddenly, amazingly, she was crying. She made fists, knuckled tears. "You tell me. Tell me *how*. How to get out and up!"

Doc Roberts sort of leaned into his frame, the way an ordinary man might slump in a chair. He looked at her—really looked. She looked right back. She knew he hadn't had many customers. Breeders looked after each other and their kids; free laborers paid to get their lumps and wounds hacked and sealed at the Factory dispensary.

He said, "What's your name?"

She said defiantly, "17."

She'd chosen it herself. She liked the way it screwed up the system. Clerks would ask if it was her given name, and she'd say no, it was what she called herself. Was she her mother's seventeenth kid, the clerk would want to know, and she'd say no. Her age? She didn't know, fifteen maybe. What was her real name then? 17, she'd say, stubborn, defiant. That was what she was. 17. She had started calling herself that a little while before she'd left the cycling pack, had beaten any kid who called her different until it stuck. Her mother called her 'Teen, a compromise.

Doc Roberts didn't question it. He put his turtle head to one side and said, "You pay me, 17, and I'll give you some teaching. How does that sound?"

That was how it began. She took up cycling again to pay him. Mercury chases were the best. She knew the tunnels under the Factory as well as anyone. She knew where the heavy silvery stuff collected, always came back with twice as much as anyone else. But it was dangerous. Not just because mercury and other heavy metals could give her the shakes or the falling sickness, but because sooner or later a gang of jacks or a pack of kids would find her down there and beat her and maybe kill her for her gleanings.

She surprised Doc Roberts by being able to read (she had learnt from the brief captions under the cartoon notices the bulls pasted everywhere), and he soon discovered her knack of being able to multiply and divide long numbers without really thinking about it.

"You're an idiot savant," he said.

"You mean like a dummy? I'm no dummy."

"Maybe not. But you have a trick in your head. You can do something that takes most people a lot of brain-hurt, as naturally as breathing."

"It'll help me pass the tests?"

"You're bright, 17. I'll teach you as long as you want to keep paying me. When you're ready, you can buy tests that will find out just how bright you are. Intelligence is precious, as precious as mercury or silver or copper or chrome. There may be better things than going up."

"You mean like whores? I don't think so."

A few girls and one boy from her rack had gone that way. You saw them sometimes, visiting their families. The last one 17 had seen, a girl, had worn silver boots, silver panties, and a very short open mesh dress, nothing else. 17 had looked at herself afterward and knew she'd never make the grade—wide hips, no breasts, a blob of a nose. Besides, the best the whores could

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hope for was to become the plaything of one of the Factory bulls until their looks gave out and they were sent to work the Meat Rack.

Doc Roberts gave 17 one of his sharp looks. He said, "I only want money off you, 17. I upped and reupped. Radiation took care of *that* itch."

She said, "Would this cost more than learning about the up and out?"

"Maybe. If you're real bright, the bosses might pay for some of it. They need bright people."

"I'll pay. I want *out*, Doc. I want it terrible bad."

Doc taught her more than math. He showed her what the world beyond the Factory was like. 17 had never been outside the Factory, and now she hungered after it the way an addict has the jones for ripple or meth or smack. Doc taught her the true name of the world and the true name of its sun, explained its history.

17 had thought that the world was called the World; that its sun was called the Sun. Doc told her that the world was really called Tierra; the sun was a star called Delta Pavonis.

"We came from a long way away," Doc said. "So far away you have to measure the distance in years." It took two days to explain Einsteinian relativity, and the reason why nothing could go as fast as light. "That's why our ancestors came as zygotes in the seeder ship," he said.

"Was it big?" 17 had a hazy idea of something as big as the Factory falling through space toward a star that swelled like a balloon to become the sun.

"Oh no. In travel mode, it was not much bigger than you or me. It had a light sail for braking that spread out for thousands of kilometers, but that was only a few molecules thick."

Explaining all this took more days, extra lessons after the lessons 17 bought with her cycler money.

Doc told her, "When the seeder hit dirt it built the first Factory, and that built *us*, and cows and wheat and all the other stuff we eat."

"Like porridge and yeast?"

"Porridge is edible plastic. Yeast—I don't know where yeast came from. Maybe we brought it here, maybe it's native. Some of my plants came on the seeder ship, 17. See the thin green ones? That's wheat grass. I pulp it and drink the juice. That's from Earth, like you and me and cows. The other plants, the orange and red ones, are native. We got rid of most of the native life, but there's still a lot around in unlooked corners."

"Bugs and haunts."

"Yes. I suppose you might have seen one, now and then."

"Seen plenty of bugs, but never yet a haunt. But they say there's one down in the tunnels now. A couple of kids went missing. Bloodworms, though. I know about those." She showed him the welts.

"I suppose the haunts get in through the vents of the main cooling plants, or along the slurry pipes from the mines," Doc said. "They are tough things because this was a hard place to live. You know why?"

17 nodded. She had learnt it last week. "Because of there's no broom in the system. No Jupiter to sweep up comets that fall from the Oort Cloud. That's why the Service and Comet Watch is important, else the world would get hit bad every hundred years. But *why* is it that way, Doc? Why are all the big planets near our sun?"

"No one really knows. Maybe the primordial disc from which the planets condensed was spinning slowly, so the big planets formed close in and locked up most of the heavy metals in their cores. But that's only a theory."

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"Well, they should *know* why. It's why cycling is so important, like they always tell us. Why heavy metals cost so much. They don't pay well for cycling, though. They should, don't you think?"

"That's economics, not orbital mechanics, 17. But I suppose it does all fit together."

Doc was constantly amazed by her ignorance and by her eagerness to learn. She knew about the One Big One, but had thought it had wrecked only the Factory, not the whole world. She hadn't known about the settlement of Tierra, the rise of the Syndic, and the reason why people went up, hadn't even known that the world was just one of a hundred worlds. She was like a plant that will push up concrete slabs and break apart the seams between steel plates to get at light. She was hungry for everything he could give her. He had watched her work out from first principals why orbits were elliptical. She had soaked up Newtonian mechanics, tensor calculus, n-body interactions. He didn't spend any of the money she gave him. She would need it later, when she got out into the world.

People began to notice that she spent a lot of time with Doc Roberts. 17's mother said that she shouldn't start thinking that she was more than she was, and they had a furious argument, with her mother stirring yeast soup all the time and the latest baby crawling around. 17 stormed out, and then Dim cornered her in the market.

"Tell me why you go wi' that old cripple-man," he said. He was running solo, her one piece of good luck. He had tattoos everywhere, wore only ripped shorts and a harness to show them off, and to show off his steroid-enhanced muscles, too. He stank of sweat and the goo he put on his skin rash. People avoided looking at the two of them; Dim had a hard rep.

Dim said, "He not a real man." His spittle sprayed her cheeks. "They cut it off when they go up. Or do you do it with his rack?"

"You dumb as a worm," 17 told him. "*Hung* like one, too. What you have isn't anything. I didn't even feel it."

"You getting a filthy tongue, girly. You getting above yourself."

Dim tried to put his hand over her mouth, but she bit his thumb and got away from him. He shouted after her. "Me and my jacks will find you in the tunnels, quim! We ream you both ends!"

The next day, someone saw a haunt in the sewers, stooping over a kid it had just killed. The day after, Doc told her that some bosses were coming for a bug hunt, that it would be a chance better than any test.

"You shine in this, 17, and they'll take notice."

"You can get me a job bait-running? It should be mine. I know the tunnels good. Better than anyone."

"I have a little pull. I'm part of the Syndic, 17, but at a low level, about the same as the Factory bulls. The bulls work for the turf bosses. Above them are the ward bosses, and above *them* are the big capos. The higher you are, the more you see. The capos see a long way. They give up some of what they have to make sure the world holds together so that they can keep what they have. That's why we have Comet Watch and all the rest of it."

"And one of them will help me?"

"They're coming here to hunt bugs, not little girl geniuses. But you shine, maybe one of them will notice, and he'll ask me about you."

"Will he put me in the Service? Will he send me up?"

"Better than that. You've got a *mind,* 17. It shouldn't be wasted in the up

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and out." Doc lifted an arm with a whine of servo motor. Loose skin hanging off bone, like the old women who sorted rags. He said, "Look at me. This is what happens to people in the up and out. Muscle wasting, decalcification of bones, circulatory collapse. Radiation fries gonads so the Service sterilizes its recruits. Radiation gives you cancers. These scars on my face, they're where keloid growths were cut away. I lost a meter of gut, too."

"But it's still better than the Factory."

"That's true," Doc said. "They made me a citizen, they gave me medical training and the rest of my education. But you can't keep reupping. The Syndic doesn't want people living permanently in the up and out because they don't want to lose control. Suppose people decided to *aim* comets at the world instead of deflecting them? You get upped, and if you do good, you can reup, but then they drop you into the well. I'm forty-two, 17. I got maybe five more years."

17 started to say that that was ten more years than anyone in the Factory, but she saw he wasn't listening.

"A mind like yours," he said, "it should burn for a hundred years. That's what a boss can give you, if he sees what you are."

Almost every free laborer and jack signed up for the hunt; hardly any made the cut. But 17 did, and she had learned enough to thank Doc even though she thought that she would have made it without his help. Dim wasn't on the list; none of the jacks were. She saw him one time afterward, and couldn't resist taunting him. She would be safe from him for the next decad, because there was a lot of training to be done.

One of the junior bulls took charge of them. Divided them into groups of three, told them they were bait-runners now. They would go ahead of each boss, flush out anything bigger than a rat-crab and drive it toward the guns. He taught them signals made up of long and short whistle blasts, how to use proximity radar and flash guns. But most of the time was spent drilling etiquette into them.

"Never look one of the bosses in the eye," the bull said. "Never speak unless you are spoken to, and always answer *at once.* If you don't know the answer, say so. Say *I don't know, boss.* Go on, try it."

The bait-runners gave up an uncoordinated mumble.

"Smarter. Quicker."

I don't know, boss!

"Fucking awful," the bull said. "A bunch of crickets could do better." He was a tall man with a pot belly and a bald patch he tried to hide by combing his glossy black hair sideways. There were sweat patches on his white shirt under his arms. He strutted down the line, staring fiercely at the men and women, striking any who dared meet his gaze. 17 looked at her feet, trembling with fear and anger. When he reached the end, he turned and yelled, "You all listen up! The people coming here are some of the most important on the planet! They can erase the Factory at a whim. I have ten days to bring you to some sort of civilized behavior. You will lay down your lives for them if necessary. You will give up everything you have, at once and willingly. You will cut off your *dicks,* cut out the hearts of your children! And you will sing out loud and clear when I ask, or I'll send all of you to the mines. Let's hear it once again!"

They all sang out.

I DON'T KNOW, BOSS!

Doc fed 17 private information about the visiting bosses. The training was so hard, he had to visit her in the hour before lights out. It was the first time she

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had seen him outside his shack. He had pics of each boss, and told 17 which family they belonged to, how they stood in the complicated hierarchies. They were all men, all very young. None of them seemed to have proper jobs. They climbed mountains around the North Pole, sailed catamarans in the southern ocean, spent their winters on the wide, white beaches of the Archipelago. They all looked the same to 17. Tanned skin, broad white smiles, buzz-cut blond hair, good cheekbones, firm jaws. She was good with numbers, not people. She still hadn't got their names straight in her head when they arrived.

The whole Factory got the day off. For the first time in a hundred years, the machines were stood down. The silence hummed in 17's head. She wondered if it was like the silence of the up and out. The foremen handed out flags and streamers, and people waved them as the cavalcade of limousines swept through the main drag to the compound where the bulls lived.

There were fireworks that night, fans of colored stars exploding under the dome. Calcium red, copper green, sodium yellow, cobalt blue. The next day, the bug hunt started.

17 was teamed with a couple of older men, who made it clear they had no time for her. She didn't care. She knew that she could shine only as herself, not as part of a team. She knew every bit of the sewer tunnels, didn't need to look at the corroded plates that marked every intersection as she blew through the perimeter of the area assigned to her team, making a wide arc that pivoted on one of the Factory's waste treatment plants. There were always plenty of mussel beds and pack crab nests there, and she had a feeling that the haunt would need something to eat other than the three kids it had snatched.

It was dark and warm in the tunnels. Only a few of the lights worked, a broken chain of dim red stars stretching away under the low curved roof. 17 sloshed through knee-deep scummy water. Water fell thunderously in one of the tunnels; huge islands of stiff foam whirled on the currents. Pack crab nests bristled along the waterline there, built of scraps of plastic and metal. The entrance hole of each nest was blocked by the swollen claw of its resident; desperate cyclers risked getting bitten or poisoned to tear up the nests for the scrap they contained. Barnacles floated their feathery sieves on the water, snatched at her wet suit. She edged past a reef of razor-edged mussels, paused at a Y junction.

One way led to the cooling water inlet complex, the other toward the labyrinthine drains beneath the pulp-holding tanks. Something was moving toward her, coming toward the junction. She put her head close to the water, heard slow sloshing footsteps, jammed against the wall, ready to blow her whistle. But it was something stranger and more fearsome than the haunt or any bug.

It was one of the bosses.

"Hey," he said breathlessly. "I saw some sign back there. Parallel scrapes on the bricks of the roof? New, cut right through the black slime stuff. My proximity radar gives too many signals because of the currents, but it must be close, don't you think?"

17 nodded. She had forgotten all of the bull's etiquette lessons.

The boss grinned. "That's why you're here, right? You're not on my team, but you guessed it would hang around here."

She nodded again. He was taller than Doc, well muscled and lithe, and impossibly young. His black and pink wetsuit was clean and new, not a rip or

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patch on it. His gun was slung on one broad shoulder, his breathing apparatus on the other. His grin was very white in his tan face; his hair was so blond it was as white as new paper. She could smell his cologne through the stink of the tunnels.

He said, "I'll bet you know every centimeter of this place. We'll clean up. Raphe *will* be pissed. Where do you think it might be?"

17 pointed down the tunnel that led toward the cooling water inlet.

"You lead on," the boss said. He kept talking as they sloshed through the water, moving with the current. "You've lived here long? No, wait, I bet you've lived here all your life. You know, I've been further north than this, but it's bleaker around here than at the pole. Just the forests and the sea, and the sea is covered with ice pack. And the mines further inland. I saw the pipes that carry the ore slurry from the air, like black snakes through the forest. That was before the weather closed in. Sleet *and* lightning? I suppose it's the iron in the rock. I'm not surprised the place is domed; only haunts and ghouls and bugs could live outside. Now, where do we go from here?"

They had reached another Y junction. Both tunnels sloped steeply upward away from them. The inlet complex fed seawater to the cooling system from concrete surge baffles and was half as big as the Factory itself. 17 had never been this close to the outside before, and didn't know where to go next, but she didn't want to look stupid, and so pointed to the left-hand tunnel. But they had gone only a little way when it split again.

The boss saw her confusion and said gently, "I'll go right and you go left. We'll meet back here in ten minutes. Oh, I bet you don't have a watch. Here."

He stripped a black chronometer from his wrist. "I have a chip," he said. "This is just jewelry."

17 took it. It was very heavy. The casing was titanium or chrome steel or some other impossibly rare alloy. Certainly the crystal beneath which black numbers counted the seconds was a cultured diamond.

The boss said, "I don't know your name."

"Katrina."

She said it without thinking.

The boss made a funny little bow. "Katrina, I'm pleased to be hunting with you. If you see anything, blow hard on your whistle, and I'll be right there."

Two minutes into the tunnel, she knew that the haunt was close. Pack crab nests crushed. Fresh scrapes from the thing's spines on the ceiling, on the walls. A breeze chilled her face. It smelled as fresh as the boss, clean and wild. The smell of *outside*. The light ahead was daylight.

The haunt was at the screens at the end of the tunnel. It had already twisted aside the first set, was prying at the second. It was silhouetted against the thin grey daylight. Thousands of white flakes—snow—blew around it.

It turned on her with a swift liquid grace, opening its mandibles wide. It was as tall as the boss and thinner than Doc. Its long body was articulated in a dozen places. Its carapace was red and gold. Fringes of bronze hair grew thickly at the joints and at the bases of its spines. Its dozen limbs were as thin as wire, and impossibly long.

It had a terrible beauty.

17 froze, one hand on her utility belt. Flares, the proximity radar, a flash gun useless in daylight, her whistle. Nothing else, not even a pry bar. She could have burnt it with a flare, but she knew that would only enrage it, not kill it. It didn't matter if a few bait-runners were killed as long as the bosses got their sport.

When she did not move, the haunt turned back and started to pry at the

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screen again. It was working at the bolts, she saw, trying to turn them against beds of corrosion. It was trying to get out.

Pipes hung from the ceiling in an overhead maze. Rotten lagging hung from them in leprous sheets. 17 ran forward, jumped as the haunt whirled again, grabbed a pipe with both hands, and swung through 90 degrees, right over the thing's head. The soles of her boots crashed into the screen, and it bowed outward with a squeal. The haunt slashed at her, catching several of its wire-thin claw-tipped limbs in her wet suit. Frantic with fear, she twisted free, while it squalled below, got a leg free and kicked and kicked at rusted mesh. The haunt dropped to a crouch and threw itself at the screen.

Screen and haunt tumbled away. Hanging upside down from the pipe, 17 saw the haunt fall, but she could not believe it was gone. Snow and wind blew around her. She was still hanging there when the boss came back and found her.

He helped her down. He saw the signs of the haunt and leaned at the edge of the broken screen, looking down. 17 trembled with cold and spent fear. She was convinced that the boss would kill her, but when he turned, he was grinning. He said that the hunt itself was more fun than killing some poor bug, and then he was gone, running into the darkness beneath the Factory. 17 followed as best she could. She had twisted her ankle when she had kicked out the screen.

She didn't see him again. By the time she got back to the mustering point, the bosses were flying back to the city. She racked her equipment and went to find Doc to tell him that she had failed, and found the worst thing of all.

Doc was lying battered and bloody in his broken and battered exoframe amidst the ruin of his indoor garden. He was dead. A motor in the exoframe kept trying to lift his left arm, whining and relaxing, whining and relaxing. 17 tore out wires until it stopped. Books lay everywhere, torn and soaked with water leaking from a broken irrigation pipe. All the sunlamps had been smashed. The glass front of the pharmacy cabinet was smashed; the shelves were empty.

17 saved a few of the books, picking them at random, and left Doc for the Factory cops to find. They came for her a few hours later, but she knew they couldn't pin Doc's death on her because she had been down in the tunnels. They questioned her anyway—Doc had been a citizen after all—but the beating was routine, and in the end they let her go. One told her that Doc had probably been killed by some junky looking for a high, but she knew better.

She knew even before she saw Dim. It was the next day. He was whistling and hooting amongst his jacks while she waited with the other laborers.

After a shift spent reaming out pipes that carried cellulose sludge from one settling tank to another, she paid to get real clean, bought gloss and perfume from the store. The perfume stung her skin. It smelt more strongly of roses than any rose had ever smelt.

Dim was hanging with his jacks in his usual bar. She ignored him but knew he'd come over.

He did.

"I hear some junky did your cripple-man lover, girly-girl. You don't worry. Dim'll see to all your needs!"

17 endured the touch of saliva spray on her face, the smell and heat of him. She found it amazingly easy to smile.

Dim said, "How did the cripple-man do you? Not good, I bet. I bet you come

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looking for me to show you how all over again." This last said loudly, for his jacks to hear. He acknowledged their whistles and hoots with a casual wave. "I got what you want," he told 17, his voice close and hoarse in her ear. "Prime worker meat, hot and hard."

17 put her hand between his legs, squeezed what was there and walked right out, her heart beating as quickly as it had when the haunt had turned to face her.

Dim followed her through the market, shoved her into a service entrance behind one of the stalls. "Not here," she said. "I know a place."

"I bet you do. But we ain't going to any of your secret places."

He was breathing heavily. She let his hands do things.

"You didn't come armed," he said. "You know what's right for you."

"I know."

"That junky who did your cripple-man did you a favor. You wait here."

He was back two minutes later with tubes of vodka. "We go to my place," he said, and held her wrist tight. She didn't resist.

It was an upper bunk in the men's dorm. She felt the brush of the eyes of every man who turned to watch as Dim walked her down the narrow aisle. She got up on the bunk. The mattress stank of Dim and stale marijuana. There was a TV hung on a stay in one corner, a locker at the foot of the mattress.

She started to pull at her belt while Dim velcroed the curtains together. When he turned, she snapped her wrist and at the same time thrust her hand forward; the long sliver of plastic she'd ripped from her belt stiffened when she snapped it, went into his eye, and punched through the thin bone behind it. Blood burst hotly over her fingers. He shivered and fell on her with all his weight, dead as poor Doc. She found the card that opened the locker, shoved his body through the curtains and dropped all the vials and capsules and hypos on top of it, swung down, and walked out, looking straight ahead.

No one tried to stop her.

Thirty days later, she was five thousand kilometers away, under a hot blue sky on the roof of the Service induction building. She was in a line with two hundred fresh recruits, waiting for the shuttle copters that would take them out to boot camp. She was wearing the cleanest dungarees she had ever worn, crisp and sky blue, polished boots, a padded impact helmet with its silvered visor up.

Doc Roberts had wanted her to change her orbit by a close encounter with one of the bosses, the way ships gained delta vee by swinging past a planet, but she knew that this was her true vector. She would fly it as true and straight as she could, climb as high as she could. She had only her hunger. The rest she had left behind. She was no longer 17. She was a recruit, newly born into the world.

The sergeant addressed the line. He was a veteran, his face like a leathery mask, one eye socket empty. His exoframe was just like Doc's. "You're in the Service now!" he yelled. His amplified voice echoed off into the sky. "You're going up and out, beyond the ken of mortal men! You're meat in a can. Everything human will be burnt away. You don't want that, then step out of line now!"

No one did. The Service's psych profiling was good.

"Close up and straighten up," the sergeant yelled.

Moving in unison with her fellow recruits, she snapped down the visor of her helmet. She was no longer 17. She had left that behind with her true name. 518972 was stenciled in black above her visor. That was her number now. O

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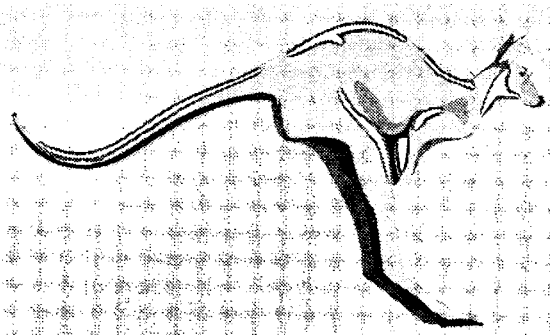

WILLY IN THE NANO-LAB

Willy made a nano-critter,
set it on his little sister.
It dissolved her into goo,
reassembled her as a kangaroo.

Little Willy, oh so clever
put more nano-machines together.
Willy wasn't quite so smart:
they took Willy right apart.

It wasn't quite the thing to do;
dissolved his playroom into goo.
Now California's just goo that's gray
we didn't need it anyway.

—Geoffrey A. Landis

Illustration by Shirley Chan

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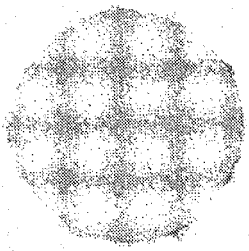

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James Patrick Kelly

LOVESTORY

James Patrick Kelly tells us he has "wanted to write a story that examined gender roles for a long time, and had notes about a three-sexed alien species that date back to 1990. I finally started the story because I needed something to bring to the Sycamore Hill Writer's Workshop last year. Although I had the ending and the structure when I began, I didn't find out what it all meant until I got to the last page."

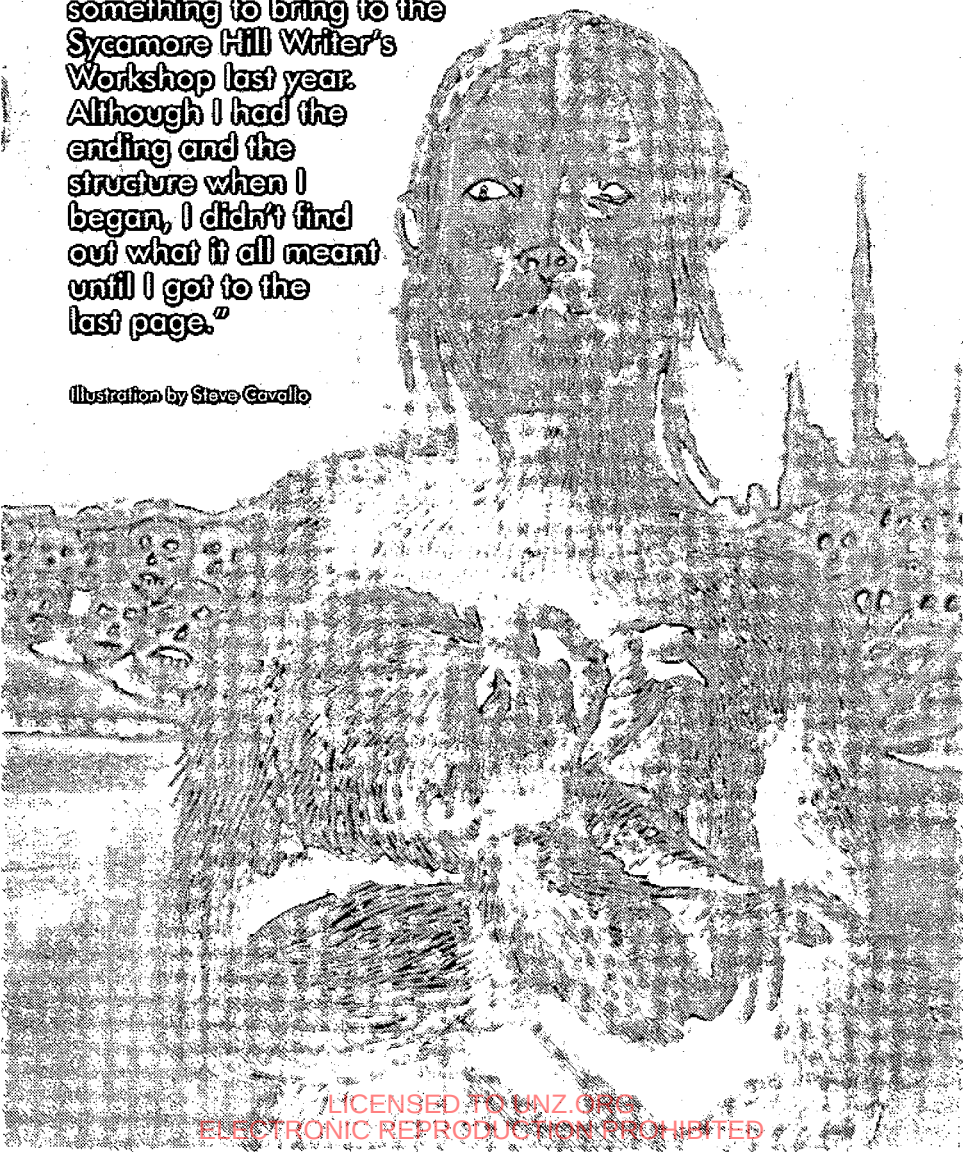

Illustration by Steve Cavallo

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One

Mam should have guessed something was wrong as soon as the father entered the nursery. His ears were slanted back, his ruby fur fluffed. He smelled as sad as a cracked egg. But Mam ignored him, skimming her reading finger down the leaf of her lovestory. It was about a family just like theirs, except that they lived in a big house in the city with a pool in every room and lots of robot servants. That family loved one another, but bad people kept trying to drive them apart.

"How's the scrap tonight?" The father shut the door behind him as if it were made of glass.

It was then that Mam realized the mother wasn't with him. "What is it?" She bent the corner of the leaf back to mark her place. The father and mother always visited together. She loosened her grip on the lovestory and it rewound into its watertight case.

"Wa-wa, it's the lucky father!" The scrap tumbled out of the dark corner where she had been hiding and hugged the father's legs. "Luck always, Papa-*pa!*" The father staggered, almost toppled onto the damp, spongy rug, but then caught himself.

The scrap had been running wild all night, talking back to the jokestory she was only half-watching on the tell, choreographing battles with her mechanical ants, making up nonsense songs, trying to crawl in and out of Mam's pouch for no good reason. It was almost dawn and the scrap was still skittering around the nursery like a loose button.

"Oh, when the father swims near," sang the scrap, "and he comes up for air, all the families cheer."

He reached down, scooped her into his arms and smoothed her silky brown fur, which was wet where it had touched the floor. It had only been in the last month that the scrap had let anyone but Mam hold her. Now she happily licked the father's face.

"Who's been teaching you rhyme?" he said. "Your mam?" He laughed then, but his wide, yellow eyes were empty.

"Mam is fat and Mam is slow. If I'm a brat, well, she don't know."

"Hush, little scrap," said the father. "Your tongue is so long we might have to cut some off." He snipped two fingers at her.

"Eeep!" The scrap wriggled in his arms and he set her down. She scrambled across the room to Mam's settle and would've wormed into her pouch, but Mam was in no mood and cuffed her lightly away. The scrap was almost a tween, too old for such clowning. Soon it would be time for them to part; she was giving Mam stretch marks.

"Silmien, what *is* it?" Mam waved at the tell to turn the scrap's annoying jokestory off. "Something has happened."

The father stiffened when she named him. This was no longer idle family chatter; by saying his name, she had made a truth claim on her mate. For a moment, she thought he might not answer, as was his right. But whatever it was, he must have wanted to tell her or why else had he come to them?

"It's Valun," he said. "She's gone."

"Gone?" said Mam. "Where?"

"To Pelotto." There was an angry stink to the father now. "She went to Pelotto, to live with the aliens."

"Pelotto?" Mam was confused. "But the scrap is almost weaned."

"Obviously," said the father. "She knows that."

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Mam was confused. If she knew, then how could she leave? "What about her patients?"

"Gone?" The scrap whimpered. "Mother gone, mother?"

"Who will give the scrap her name?" Mam reached an arm around the little one to comfort her. "And it's time to quicken the new baby. The mother, Valun and I have to . . ." She paused, uneasy talking about birthing with the father. "What about the baby?" she said weakly.

"Don't you understand? She has *left* us!" The father's anger was not only in his scent, but spilled over into his words. "You. Me. She has left the family. She's an out, now. Or maybe the aliens are her family."

Mam rose from her settle. She felt as if she were hefting a great weight; if she did not bear the load, the whole house might collapse around them. "This is my fault," she said. "She does not trust me to carry the baby, nurse it into a scrap."

"It's not you!" the father shouted. "It's *her*." The scrap shrank from the crack of his voice. "We're still here, aren't we? Where is *she?*"

Mam stooped to let the scrap wriggle into the pouch.

"She thinks I'm stupid," said Mam. She felt the moisture in the rug creep between her toes. "She has nothing to say to me anymore."

"That's not true."

"I heard her tell you. And that all I read are lovestories."

The father squished across the room to her then, and she let him stroke the short fur on her foreleg. She knew he meant to comfort, but this unaccustomed closeness felt like more weight that she must bear. "This has gone very badly," he said. He brought his face up to hers. "I'm sorry. It's probably *my* fault that she's gone." He smelled as sincere as newly split wood, and Mam remembered when she had fallen in love with them, back at the gardens. Then it was only Valun and Silmien and her. "Something I did, or didn't do. Maybe we should've stayed in the city, I don't know. It has nothing to do with you, though. Or the scrap."

"But what will happen to the new baby?" Mam said. Her voice sounded very small, even to her.

"I love you, Mam." The father pricked his ears forward, giving her complete attention. "Maybe Valun loves you too, in her way. But I don't think you and I will ever see that baby."

Mam felt the scrap shiver inside her.

The father lingered for a few moments more, although everything important had been said. Mam coaxed the scrap out of hiding and she slipped her head from the pouch. She stared at the father as he rubbed the fluff around her nose, saying nothing. The scrap had just started her tween scents, another sign that it was time for them to part; she gave off the thin, bright smell of fear, sharp as a razor. The father made warbling sounds and her edge dulled a little. Then he licked the side of her face. He straightened and took Mam by surprise when he gave her an abrupt good-day lick, too. "I'm sorry, Mam," he said, and then he was gone.

Mam collapsed onto her settle. The heated cushion was blood hot, but did little to ease the chill that gripped her neck. For a moment she sat, brittle as ice, unsure what to do. The next ten minutes without Valun were harder to face than the next ten years. In ten years they'd probably be dead, Mam and the father and the mother, their story forgotten. But just now Valun's absence was a hole in Mam's life that was too wide to cross over. Then the scrap stirred restlessly against her.

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"Time to sleep," Mam said, tugging at the scrap's left ear. "Almost dawn." No matter what happened, she was still this one's mam.

The scrap shook her head. "Not tired not."

"You want the sun to scratch your eyes out?" Mam rippled her stomach muscles, squeezing her from the pouch like a seed. The scrap mewled and then slopped across the wet rug as if she had no bones. "You pick up your things and get ready." Mam gave the scrap a nudge with her foot. She might have indulged the little one; after all, the scrap had just lost her mother. But then Mam had just lost her mate and there was nobody to indulge *her*. "Make sure you clear all your projects off the tell."

The scrap formed up her ants and marched the little robots back into the drawer of her settle. She ejected her ID from the tell, flipped it onto the tangle of ants and shut the drawer. She sorted the pillows she had formed into a nest. She turned off the pump that circulated water through her rug, dove into the nursery's shallow egg-shaped pool at the narrow end and immediately slid out at the wide end. "Does this mean I can't go to the gardens?" She shook the water from her fur.

"Of course not. This has nothing to do with growing up. You'll be a tween soon, too big for the pouch."

"But what about my name?"

"The father will give you one. I'll help him."

"Won't be the same."

"No." Mam hesitated. "But it will be enough."

The scrap smoothed the fur flat against her chest. She was almost two and her coat had begun to turn the color of her mother's: blood red, deepening like a sunset. "They're the parents," she said. "They were supposed to take care of us."

Mam tried not to resent her. The scrap *had* been taken care of. She was about to leave the family, go off to the gardens to live. She'd fall in love with a father and a mam and start a new family. It was Mam who had not been taken care of, Mam and the new baby. "They did their best."

"I wish she were dead," said the scrap. "Dead, red, spread on a bed." She was careful as she wriggled into Mam's pouch. "Do you think she'll come to visit me at the gardens?"

"I don't know." Mam realized then that she didn't know anything about Valun. The mother had always been restless, yes, and being a doctor in this little nowhere had only made things worse. But how could aliens be more important than the family? "But I'll come visit."

"*You* have to, you." said the scrap. "You're my old, fat mam."

"That's right." Mam tickled her behind the ears. "And I will never leave you." Although she knew that the scrap would leave her soon enough, just like she had left her mam.

Mam got up to darken the windows against the rising sun. It was a chore getting around; the scrap bobbed heavily against her belly as she crossed the room. In the last few days, the scrap had begun to doze off on her own settle; Mam was once again getting used to the luxury of an uninterrupted day's sleep. But it felt right to carry the little one just now, to keep her close.

Mam waddled back to her settle through the soothing gloom. She wasn't tired, and with the scrap in the pouch, it was hard to find a comfortable position. The scrap was fidgety too. Mam wondered whether the father was sleeping and decided he was probably not. He'd be making a story about what had happened, trying to understand. And the mother? No, Valun wasn't a

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mother any more. She was an out. Mam focused on the gurgle of water in the pool and tried to let the sound quench her thoughts.

There were never aliens in the kinds of lovestories Mam liked to read. Fathers and mothers might run off to be an out for a while, but everyone would be so unhappy that they'd come back at the end. Of course, mams never ran. Or else one of the three mates might die and the others would go to the city and try to find a good out to take their place.

She started when the scrap's lips brushed the tender skin near her nipple. At first she thought it was an accident, but then she felt it again, tentative but clearly deliberate, a question posed as loving touch. Her first impulse was to push her away; the scrap had fed that afternoon. But as the nubbly little tongue probed the edges of her aureole, Mam knew that it wasn't hunger that the scrap sought to ease. It was grief. Mam shivered and the underfur on her neck bristled. Had the scrap tried to nurse out of turn on any other day, Mam would certainly have shaken her from the pouch. But this day they had each been wounded; this feeding would ease not only the scrap's pain but Mam's as well. It was something they could do for each other—maybe the only thing. With a twitch of excitement, she felt her milk letting down. It wasn't much, it wasn't time, but the scrap had such a warm, clever mouth.

"Oh," said Mam. "*Oh.*"

The father had told her once that, when she nursed, chemicals flooded her brain and seeped into her milk. He said this was how Mam was making the scrap into who she was. He told her the names of all the chemicals, but she had forgotten them. Mam had a simpler explanation. She was a mam, which meant that her emotions were much bigger than she was, so they spilled onto whoever was nearest. The mother always used to say that she was a different person when she was with Mam, because of her smell. Even the father relaxed when the family came together. But it was the scrap Mam was closest to, into whom she had most often poured the overflow of feelings. Now, as they bonded for one of the last times, perhaps *the* last time, Mam was filled with ecstasy and regret. Of all the pleasure the scrap had given her, this was the most carnal. When she sucked, she made a wet, little sound, between a squeak and a click, that made the top of Mam's head tingle. Mam enfolded her bulging pouch with both arms and shifted the scrap slightly so that she came at the nipple from a different angle. She could smell the bloom of her own excitement, heady as wine, thick as mud. She thought she might scream—but what would the father say if he heard her through the walls? He would not understand why she was taking pleasure with the scrap on this night of all nights. He would . . . not . . . understand. When the urgent sound finally welled up from the deepest part of her, she closed her throat and strangled it. "My . . . little," she gasped, and it was as if Valun had never gone, the aliens had never come to plague the families with their wicked wisdom. "My little . . . *scrap.*"

The weight lifted from her and for a brief, never-ending moment, she felt as light as air.

Two

Silmien was proud of his scrap. "Tevul," he corrected himself, cupping the name he had given her on his tongue. He was so proud that losing her mother almost didn't matter anymore. He spotted her and some of her friends

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splashing in the pond across the bone garden. She was so quick, so carefree, so beautiful in the chill, blue light of the mothermoon.

"What?" Mam had stopped to smell the sweetbind that wound through the skeleton of someone's long dead ancestor; she hurried over to him. "What?"

He pointed. Mam was already nearsighted from spending so much time indoors, the curse of the nursery. Distance seemed to confuse her. "She hasn't seen us yet," he said.

"The scrap?"

"The tween," said Silmien. "Tevul."

Silmien was proud of Mam, too. She had been a good parent, considering everything that had happened. After all, Tevul was their firstborn. Silmien knew just how lonely the long rainy season had been for Mam, especially since she didn't exactly understand about Valun and the aliens.

But that wasn't right. Silmien was always surprised at how much Mam understood, even though she did not follow the news or query the tell. She engaged the world by means that were mysterious to him. If she did not always reach for the complex, her grasp of essentials was firm. Silmien drew strength from her trust in him—and her patience. Even though it was a burden on her not to be nursing a scrap, she had never once nagged him to start looking for a mother to take Valun's place.

"I'm glad you came tonight, Mam." He wanted to put an arm around her, but he knew that would make her uncomfortable. She was a mam, not a mother. Instead, he stooped and picked a pink buttonbright and offered it to her. She accepted it solemnly and tucked it behind her ear.

There was something about visiting the gardens that revived Silmien, burned troubles away like morning mist. It was not only nostalgia for that simple time when Valun had chosen him and he had found Mam. It was the scent of the flowers and ponds, of mulch and moss, of the golden musk of old parents, the sharp, hormone-laden perfume of tweens and the round, honest stink of chickens. It was the fathermoon chasing the mothermoon across an enormous sky, the family obelisks pointing like fingers toward the stars. Valun always used to tease him about being such a romantic, but wasn't that a father's job, to dream, to give shape to the mud? The garden was the place where families began and ended, where futures were spun, lives honored.

"Over here!" Tevul had finally caught sight of them. "Come meet my friends!"

Silmien waved back. "More introductions," he whispered to Mam. "I don't recognize a single face in this batch." It was only his second visit of the dry season, but he was already having trouble keeping them all straight. Although he was glad Tevul was popular, he supposed he resented these fortunate tweens for stealing his little scrap away from him. Tevul, he reminded himself again, Tevul. At home, he and Mam still called her *the scrap*. "Come along, Mam. Just a long smile and short bow and we'll have her to ourselves."

"Not me," said Mam. "You."

Silmien blinked in surprise. There was that odd smell again, a dusty staleness, like the corner of an empty closet. If Valun had been here, she would have known immediately what to do, but then, if she were here, Mam wouldn't be. "Nonsense," said Silmien. "We're her family."

Mam crouched abruptly, making herself as small as possible. "Doesn't matter." She smoothed the sagging pouch to her belly self-consciously.

"Why did you come then," said Silmien, "if not to see Tevul?"

"You wanted me."

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"Mam, the scrap wants you too."

"I'm not here." Mam was staring at her feet.

They had to stop arguing then, because a clutch of old parents entered the garden, giggling and stroking the bones. One, a father with thin, cement-colored fur, noticed the buttonbright behind Mam's ear and bent to pick one for himself. His companions teased him good-naturedly about acting his age. Then a shriveled mam popped one of the flowers into her mouth, chewed a few times and spat it at the father. Everyone laughed except Silmien and Mam. Ordinarily, he enjoyed the loopy antics of the old, but now he chafed at the interruption.

"I'll bring Tevul to you," he whispered to Mam. "Is that what you want?"

She made no reply. She curled her long toes into the damp soil as if she were growing roots.

Silmien grunted and left her. Mam was not getting any easier to live with. She was moody and stubborn and often reeked of self-loathing. Yet he had stuck by her, given her every consideration. Not once, since he had first told her about Valun, had he let his true feelings show. It struck him that he ought to be proud of himself, too. It was small comfort, but without a mate to share his life, all he had were glimmers and wisps.

"Pa-pa-*pa*." Tevul hauled herself partly out of the pond and perched on the grassy bank. "My father, Silmien." Her glistening coat clung to her body, making her as streamlined as a rocket. She must have grown four or five centimeters since the solstice. "Here is Mika. Tilantree. Kujalla. Karmi. Jotan. And Putket." Tevul indicated each of her friends by splashing with her foot in their direction. Karmi and Jotan and Putket were standing in the shallows and acknowledged him with polite but not particularly warm bows. Kujalla—or was it Tilantree?—was treading water in the deep; she just stared at him. Only Mika clambered up the bank of the pond to greet him properly.

"Silmien," said Mika as they crossed hands. "It is truly an honor to meet you."

"It is you who honor me," Silmien murmured. The tween's effusiveness embarrassed him.

"Tevul tells us that you write stories."

Silmien shot Tevul a glance; she returned his gaze innocently. "I write many things," he said. "Mostly histories."

"Lovestories?" said Mika.

Tilantree's head disappeared beneath the surface of the pond.

"I wouldn't call them lovestories, exactly," Silmien said. "I don't like sentiment. But I do write about families sometimes, yes."

Tilantree surfaced abruptly, splashing about and making rude, blustery sounds. The three standing tweens smirked at her.

"Silmien has been on the tell," said Tevul. "Write, bright, show me the light."

"My mam was on the tell last year," said one of the standing tweens, "and she's a stupid old log."

"Even aliens get on the tell now," said another.

"Have you written any lovestories about aliens?" Mika was smirking too.

With a sick lurch, Silmien realized what was going on. The tweens were making fun of him—and Tevul. Only his trusting little scrap didn't get it. He wondered if the reason she was always in the middle of a crowd was not because she was popular, but because she was a freak.

"Can't write lovestories about aliens." Tilantree rolled onto her back.

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"Why not?" said Tevul.

She did not reply. Instead, she sucked in a mouthful of pond water and then spat it straight up in the air. The three standing tweens spoke for her.

"Their mothers are mams."

"*Perverts.*"

"Two, few, haven't a clue. Isn't that right, Tevul?"

The air was suddenly vinegary with tween scorn. Tevul seemed taken aback by the turn of the conversation. She drew her knees to her chest and looked to Silmien, as if he could control things here in the gardens the way he had at home.

"No," he said, coming around the pond to Tevul. "I haven't written about the aliens yet." His voice rose from the deepest part of him. "But I've thought a lot about them." He could feel his scent glands swell with anger and imagined his stink sticking its claw into them. "Unlike *you,* Tilantree." He singled out the floating tween as the leader of this cruel little gang. "Maybe you should try it." He reached Tevul, tugged her to her feet, and pulled her to him. "You see, they're our future. They're calling us to grow up and join the universe, all of us, tweens and families and outs and the old. If they really are perverts as you say, then that's what *we* will be, someday. I suppose that's a big thought to fit into a small mind." He looked down at his scrap. "What do you say, Tevul?"

"I don't know what you're talking about." Her eyes were huge as the mothermoon.

"Then maybe we should discuss this further." He bowed to the others. "Luck always." He nudged Tevul toward the bone garden.

Silmien heard the tweens snickering behind him. Tevul heard it too; her gait stiffened, as if she had sand in her joints. He wondered if the next time he visited her, she might be like them. Tilantree and her friends had the next four years to twist his scrap to their shallow thinking. The family had made her a tween, but the garden would make her into a mother. Silmien felt removed from himself as they passed the wall built of skulls that marked the boundary of the bone garden. No Tevul. No Valun. Mam a stranger. He could not believe that he had defended the aliens to the tweens. That was Valun talking, not him. He hated the aliens for luring her away from him. It was almost as if they had seduced her. He shivered; maybe they *were* perverted. Besides, he must have sounded the pompous fool. Who was he to be speaking of small minds? He was as ordinary as a spoon.

"Well?" said Tevul.

"Well what?"

"Pa-*pa,* you embarrassed me, pa."

He sighed. "I suppose I did."

"Is this the way you're going to be?" said Tevul. "Because if it *is* . . ."

"No, I'll mind." He licked two fingers and rubbed them on her cheekbone. "But are you sure they're your friends?"

"*Silmien!*"

"I just thought I'd ask."

"If they're not, it's your fault." She skipped ahead down the path and then turned on him, blocking his way. "Why do you always have to bring Mam?"

"What do you mean, always?" He looked over her shoulder. The old parents had doddered off, but Mam had not moved. Even though she was still a good thirty meters away, he lowered his voice. "It's only been three times, and she wanted to see you."

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"Why can't she wait until I come home for a visit? Besides, I don't have anything to say to her. What am I supposed to do, play a game of fish and snakes? Climb into her fruity old pouch? I'm not a scrap anymore!"

"She's unhappy, Tevul. She feels unwanted, useless."

"Don't use *my* name, because there's nothing *I* can do about that." Tevul's ears went flat against her head. "It's strange, you two here together. When the others have visitors, they get their mothers and fathers. She's not my mother."

"No," he said, "she's not."

Tevul's stern facade crumbled then and she broke down, quietly but completely, just as her mother had on the night she had left him. And he hadn't seen it coming; Silmien cursed himself for having stones up his nose and knotholes for eyes. Tevul's body was wracked by sobs and she keened into his chest so that Mam wouldn't hear. "They say such mean things. They say that Mam picked my name, not you, and that she named me after a character in a stupid lovestory. I try to joke along with them so they won't make a joke of me, but then they start in about my mother, they say that because she's a doctor . . . that the aliens . . ."

She turned a scared face up to him, her scent was bitter and smoky. "What happened to the baby, pa-pa? Is he still in her? I want to *know*. It's not fair that I never got to see you pull him from mother and bring him to Mam, that's what's supposed to happen, isn't it, not all the disgusting things they keep saying, and I'm supposed to be there, only I wasn't because *she* went to the aliens, it's not *my* fault, I'm tired of being different, I want to be the same, in a real family like Tilantree, the same." She caught her breath, sniffed and then rubbed her face into thestubby fur on his chest. "No blame, no shame," she said. "The same." She shuddered, and the hysterics passed, as cleanly as a summer squall.

He bent down and licked the top of her head. "Are you unhappy here, my beautiful little Tevul?"

She thought about it, then sniffed and straightened her dignity. "This is the world," she said. "There is nowhere else."

The orange fathermoon was up now, resuming his futile chase of the mothermoon. It was the brightest part of the night, when the two parent moons and their billion star scraps cast a light like spilled milk. A stirring along a hedge of bunchbead, where a farmbot was harvesting the dangling clusters of fruit, distracted Silmien momentarily.

"I am proud of you," he said. It wasn't what he wanted to say, but he couldn't think of anything better. When the robot passed them, he dipped into its hopper, pulled out a handful of bunchbead and offered them to Tevul. She took some and smiled. Silence slid between them. Somewhere in the distance, the chickens were singing.

Tevul watched the stars as she ate. "Where is Mars?" she said at last.

"It's too far away." Silmien looked up. "We can't see it."

"I know that, but where is it?"

"Kadut showed me their star last week." He came up behind her and, resting his elbow on her shoulder, pointed so that she could sight along his forearm. "It's in The Mask, there."

"Why did they come, the aliens?"

"They want to help, I guess. That's what they say."

"I have to get back soon," said Tevul. "Let's go see Mam."

Tevul was very polite to Mam and Silmien could see that the visit cheered

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Mam up. Mam insisted on waiting while Silmien walked Tevul back to her burrow, but he finally understood that this was what both of them wanted. Back at the burrow, Tevul showed him a lifestory she was working on. It was about Ollut, the scientist who had first identified estrophins, the hormones that determined which females became mothers and which mams. Silmien was impressed by Tevul's writing and how much she had absorbed from the teaching tells in just one season. She was quick, like her mother. Tevul promised to copy her working draft onto the tell, so he could follow along with her research. As he was getting ready to leave, her roommate Laivan came in. To his relief, Silmien remembered her name. They chatted briefly. Silmien was on his guard for any sign of mockery, but there wasn't any. Laivan seemed to like Tevul, and for her sake, tolerated his intrusion into their privacy.

"Luck always," he said. "To both of you." And then he left.

It was only later that his anger caught up with him. Mam had fallen asleep, lulled by the whoosh of the go-to through the tunnels, so there was no one to notice when he began to wring his hands and squirm on his seat. First he was angry at himself, then at Tilantree, then at Tevul's teachers, then at himself again, until finally his outrage settled on Valun.

She had been the leader of their family. Where she jumped, they followed, even if they landed in mud. It had been her idea to move to the paddies, where the air was thick and the water tasted of the swamp. Farmers needed doctors, too, she said. She had been the one who healed the family's wounds as well, the one they all talked to.

Yet when she left them, she wouldn't say exactly why she was going, only that there was something important she had to find out from the aliens. Valun had ripped his life apart, left him incomplete, but he had tried not to hurt her the way she had hurt him. Speakers from the tell had interviewed him about Valun and about his life now. In all his statements, he had protected her. Her work with the aliens was important, he said, and he supported it, as all the families must. There were so many diseases to be cured, so much pain to be eased. It was an honor that she had been chosen. If he had followed a different path, it was because he was a different person, not a better one. He had done all this, he realized now, not because it was the right thing to do, but because he still loved her.

Only Silmien had not realized how much she had hurt Tevul. Valun hadn't visited the gardens, hadn't even copied a message to the tell. Silmien had long since decided that Valun had left the family because she had been bored with him, and maybe he could understand that. But no mother ought to be bored with her own tween! For an hour, his thoughts were as blinding as the noonday sun.

Eventually, Silmien had to calm himself. Their stop was coming up and he'd have to rouse Mam soon. What was it Tevul had said? *This was the world.* What did he have to give to it? A new family? The truth was, he couldn't imagine some poor out taking Valun's place. But life was too short, twenty years from pouch to bone garden. A new family then—and afterward, he'd give the world his story. He would need to get some distance from Valun; he could see that. But eventually he would write of how she had hurt him and Mam and Tevul. He would tell how he had borne the pain, like a mam carries a scrap. He paused, admiring the image. No, not a lovestory—the story of how he had suffered. Because of *her*.

Because of Valun and the aliens.

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Three

Valun thought she could feel the baby swimming inside her. Impossible. The baby was no bigger than her thumb. He was blind and hairless and weak and brainless, or nearly so. Couldn't swim, didn't even know that he was alive.

The baby wasn't moving; she knew that the waves she felt were made by the muscles of her own uterus. The contractions weren't painful, more like the lurch of flying through turbulence. Only this was a predictable turbulence, a storm on a schedule. The contractions were coming more frequently, despite her fierce concentration. It was what distressed her most about giving birth. Valun had gotten used to being in control, especially of her own body.

The humans had almost complete control of their bodies; it was their astonishing medicine that had drawn her to them. They had escaped from nature, vanquished diseases, stretched life spans to the brink of immortality. They managed their emotions, commanded their thoughts, summoned inspiration at will. And on those rare occasions when they reproduced . . . well, they could play their genome like a flute. There were no stupid humans, no wasted space in their population. No mother was inconvenienced by labor. . . .

Another lurch. Too soon for another contraction. Then she realized that it was the go-to decelerating. Coming to a station. The readout in the front bulkhead lit up. Uskoon. Less than half an hour until she was home. Plenty of time.

She didn't want to be traveling while she was in labor, but this was the only way to have the baby on her terms. Mothers were supposed to give birth in the nursery with their happy families gathered around them. She would be in the nursery soon enough, only she doubted that the family would be all that happy to see her. Mam would be vastly relieved—maybe that was within sight of happiness. Silmien, however, would be furious that she was forcing this baby on him and then leaving him to care for it with Mam. He'd strike the martyr's pose, maybe even write about it. The scrap? She probably hated Valun. Valun would've hated *her* mother, had she done something like this when she was a tween. Tweens' deepest feelings were for themselves; she'd grow out of it. Valun had heard that he had named her Tevul, after the heroine of that story he liked so much. Was it *Drinking the Rain?* No, the other one. But then Silmien liked too many stories too much. The world was not a story.

Thinking about them made Valun feel like the loneliest person in the universe. Part of her desperately wanted to go back to stay. She longed to sleep and eat and breathe again with her family. But not to talk; if she told them what she had learned, it might destroy them. Living with the humans had not made her happy at all. Indeed, most of the outs in Pelotto were miserable.

Valun now knew what she had only suspected when she left the family. The world they had been born into was a lie. There was no reason for the laws of birth order. No reason why she or Silmien or Mam or their little scraps should have such brutally short life spans. Mams could be mothers, mothers could nurse, outs could have babies.

No reason why there had to be families at all.

Of course, the humans did not advocate change. They offered only information; it was up to each intelligent species to decide how to use it. Except that their message was corrosive as acid. Everything was negotiable. Reality was a *decision*—and no one here was making it.

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This idea had infected Valun's imagination. Even if all the families took from the humans was the ability to prolong lives, the rigid structure of their culture must surely crumble. She wasn't sure what would come after, or who. Perhaps those people—those outs—would be happy. But how could anyone alive today bear to watch the families collapse? Valun didn't want to inflict that future on Silmien and Mam and the scrap, so she had exercised her right of silence and cut them off entirely. If they wanted to learn what she had, they would have to choose, as she had chosen. But her silence had isolated Valun from the ones she loved most. She belonged to no family now, only to herself. She was alone, but it was not what she had wanted. Alone. She drifted alone on the whisper of the go-to.

And dreamed of smells. The sweetness of rain brushing her nose like a lace veil. The honeycup he had put behind her ear; he loved to pick flowers and give them to her. The velvet scent of grass crushed beneath the weight of warm bodies. It had been so long ago that they had made this baby—much more than the traditional two years—that she had forgotten where it happened. Under the moons, out in the fields, and her head filled with the husky father smell that was like a lick between the legs. Then the hot, silky bouquet of sex. She felt as if there were a hand inside her, squeezing. The pressure was not cruel, but rather the firm grip of a lover. "Silmien!" His name caught in her throat.

Valun started awake at the sound of her own voice. The seat beneath her was damp with the yeasty soup of her birth waters. "Oh, no," she said. Ten more minutes. She focused all her attention on the knot under her belly and the pressure eased—a little. Lucky there were no other passengers in the compartment. *Luck always,* Silmien had said on the night she had left him. Why did he keep popping into her head? Concentrate. She was thinking womb thoughts when the go-to stopped at their station and she walked on candystick legs to their burrow and announced herself to their doorbot.

"*Valun.*" Silmien flung the door open. "I can't believe . . ." His nostrils flared as he took in her scent. "What have you done?"

"Come home for the holidays." She was trying for a light touch, but when she stepped into the burrow, her body betrayed her and she stumbled. Like crunching through a skim of ice, except that ice seemed to have formed in her head too. When Silmien caught her, she slumped into his arms. She knew she ought to be embarrassed for losing control. But not now—tomorrow, maybe. Felt good not to be standing on her own.

"Tevul!" Silmien shouted. "Mam!"

They carried her to the nursery and laid her on Mam's settle. The ice in her head cracked and began to melt. Something different about the nursery, but she couldn't pick it out at first. The water rug still brimmed, its damp breath filling the room. Lovestory next to Mam's settle. Wedding picture above the pool: Mam and Valun and Silmien. The tell murmured in its familiar corner. Then Valun realized the obvious. No toys, no lines of ants marching up the walls, no miniature settle in the corner. As she had expected, the scrap was home from the gardens for the lunar eclipse, but she was a visitor now and would certainly *not* be staying in the nursery. She was probably sleeping in Valun's settle, next to Silmien. And where would Valun sleep that night?

She shivered and saw her whole family gathered around her, as if she had just fallen out of a tree. Valun giggled. That seemed to fluster them even more. "Tevul." She nodded at the scrap. "Sweet name. Fills the tongue."

Tevul stared as if she thought her mother was insane.

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"I'm sorry I wasn't at your naming," Valun said. "Life in the gardens agrees with you?"

"It's all right."

"You're learning a lot? Making new friends?"

"What do you want?" said Silmien. "What has happened?"

"Valun, did *they* do this to you?" said Mam. "The aliens?"

"What?" said Tevul. "Someone tell me what's going on."

"She's having the baby," said Silmien. "Smell it!"

"She can't be." Tevul looked from Silmien to Mam and finally at Valun. "We just learned that in biology. You have to be exposed to all Mam's pheromones in order to bring an embryo out of latency. You're still supposed to be in diapause!"

"This is *their* work," Mam said.

Choosing what to tell them was the hardest thing Valun had ever done. She didn't explain how she had lied about being invited to live with the humans. She had simply gotten tired of waiting and had gone to them on her own. It turned out that was the only way to gain access. The humans never actually invited *anyone*; all the outs in Pelotto were self-selected. Self-condemned. Nor could she tell them about the longevity treatments, the first reward for those who sought human knowledge. The problem was that pregnant mothers could not be rejuvenated, even if their embryos were latent. She said nothing of how the humans had offered to remove the embryo from her womb, and how she had almost left Pelotto then. That was too much story; her time was getting short. She could feel her womb knotting again.

"By the end of the rainy season," she said, "I started to worry that some other family's pheromones might be similar enough to yours to trigger a quickening. But by then, the scrap had already left for the gardens."

"I'm Tevul," said the scrap. "You can say my name."

"So I had already missed the weaning," Valun continued, "and the chance to share scents with all of you. The humans told me that they could end diapause artificially, so I could control when I had the baby. I was sure that you all still wanted him, so I agreed. And here I am. I timed him for the eclipse so that we could all, as a family, I mean . . ." There was a sudden, vast, and inevitable loosening inside of her, and once again she felt her body slipping from her control. Something trickling, tickling through her birth canal.

"You should have told us." Silmien's scent was bitter as a nut. "Why did this have to be a surprise?"

"Because she isn't staying," said Mam. "You want to go back to the aliens, isn't that it? Your *humans*." She made it sound like a curse. "Who are you having this baby for, us or yourself?"

"Mam, I . . ." Valun pumped her knees together convulsively, then spread them apart wide. "The baby . . ." She kneaded her belly. "Help, Silmien!"

Silmien and Tevul rallied to her. No question that she could feel the baby now, wriggling, pulling himself into her vagina with his ridiculous little arms. It occurred to her that at this moment in time she had family inside and out. What odd thoughts she was having tonight! She giggled again. The scrap was licking her face and sobbing, "Ma-ma-*ma*. Oh, ma!" Valun could feel Silmien's hands on her vulva, delicately opening her as he had opened her just once before, controlling her as only a father should, fingers basketed to catch the baby. She had forgotten how much pleasure there was in giving birth, ecstasy of mind and body to smell hot, wet life scrabbling toward the world. "*Oh,*" she said, as the final dribble of birth waters

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leaked out of her, and Silmien held the baby high, offering it to the moons. "Oh."

Silmien brought the baby down so that she and Tevul could see. He was just four centimeters long and almost lost in the palm of his proud father's hand.

"He's so tiny, so pink," said Tevul. "Where are his eyes?"

"They'll grow." Silmien's voice was husky. He brought the baby to his face and cleaned him gently with the tip of his tongue. The baby's mouth opened and closed. The arms wriggled uselessly.

"Stop." The harshness of Mam's voice startled Valun. "What are you doing?"

"Washing the baby," said Silmien.

"There is no baby."

Valun propped herself on an elbow, her head savagely cleared of the moist joy of birth. Mam's scent was like a hook up her nose; Valun had never smelled anyone so angry.

"Here." Silmien offered it to her. "See it."

"A baby has a *mother*," said Mam. "There is no mother here, only a father. This is an experiment by the humans. Take it back to them. Tell them that it has failed."

"Mam, no, Mam!" said Tevul. "He can only live outside a few minutes. He has to start crawling to your pouch now. Look, he's already shivering."

"Mam," said Silmien. "Our baby will die."

"Then put it on her." Mam turned contemptuously to Valun. "Let her open her pouch. Let *her* love it."

"I have no pouch, Mam," said Valun. "Only you can take care of him." She could see that the baby was distressed. "Please, tell me what you want." He curled into a ball and unrolled with a spasm. "Mam, I'll do anything!" Whatever crumb of brain the baby had must have registered that something was wrong. He should already be threading through his Mam's fur, not still flailing across his father's hand.

"I have nothing to say to an out," said Mam. "I will talk to its mother. Does anyone know where she is?"

"There's no time for this," said Silmien.

"What do you want from me, Totta?" Valun could tell that it had been a long time since anyone had used Mam's name. "I'm Valun. The mother."

Mam's eyes narrowed. "I want you to care about someone else other than yourself," she said. "I want your story to be a lovestory, Valun."

Valun struggled up off the settle. The world spun crazily for a few seconds, but she got it under control. She cupped her hands and extended them to Silmien. "Give him to me."

He brought his hands on top of hers and opened them. Silmien was sobbing as the baby slid onto her palm. Valun had never held a baby before. It weighed less than a berry and yet it was as heavy a burden as she had ever carried. "Will you take my place, Totta?" She nodded at the settle.

Mam hesitated for a moment, but then stretched out, facing Valun. She kept her legs closed, however, and clutched her knees to her chest to cover her pouch. Valun held the baby just above her.

"Totta, Silmien, Tevul, I will stay with you and be this one's mother." Valun astonished herself. In just one season the humans had taught her more about her own biology than she had learned in a lifetime of study. How could she turn away from that knowledge? "I'll be here to give him his name," she

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continued, "and I won't leave until he has come out of the gardens with his own family. I will do this for the love of him and against my best interests. But I will not sleep with you, Silmien, and there will be no mam baby from this family. No more babies at all. I can't be what you want, and you must all accept that. When Tevul and this scrap are grown up, I will go back to Pelotto again and study with the humans. I hope it won't be too late. Until then, I will study patience."

Mam did not unbend. "I heard many words, but hardly anything of love. What kind of mother are you?"

The baby was on the move again, scrambling up the side of Valun's cupped hands. "I will love this baby because I have given up so much for him," she said. "That is the truth, by my name."

"It's not a happy ending." Mam was still not convinced.

"Totta," said Silmien, "this is not a story."

"Mam." Valun tilted her hands to show her the baby's blunt head. "Someone's hungry."

Mam closed her eyes. Her face was hard with grief as she opened her legs. Valun laid her hands on Mam's belly and let the baby slip through her fingers. He landed on his back but flipped himself immediately. Driven by instinct, guided by scent, he crawled unerringly for the pouch. With each heroic wriggle forward that the baby took, Mam's face softened. When she opened her eyes again, they were bright as stars. Valun tried to imagine herself as a mam. A difference in her family's birth order and it could have been.

Valun could smell the buttery scent of relief melting from Silmien and Tevul. And once the baby had found the nipple, Mam's nursing bliss filled Valun's nose like spilled perfume. All these happy smells made Valun a little ill. This had certainly not turned out the way she had wanted. She wondered what fool had made all those promises. How could Valun keep them?

How could she *not?*

"Ma-ma-*ma!*" Tevul hugged Valun, just like she used to, but then she was still a tween and had so much to learn about being a mother. ●

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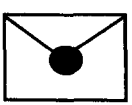

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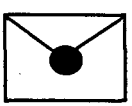

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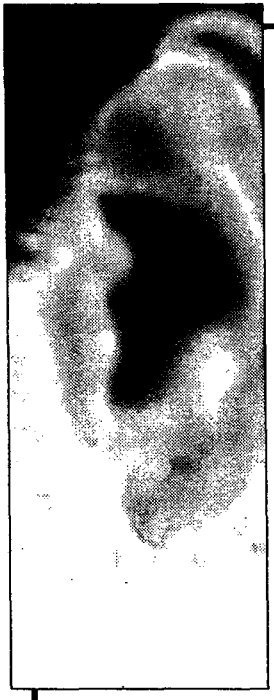


CHECKLIST

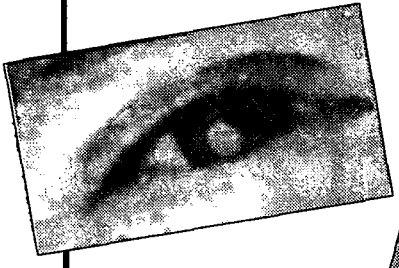
How many arms are best?
I pondered. How many arms does a
modern man need?

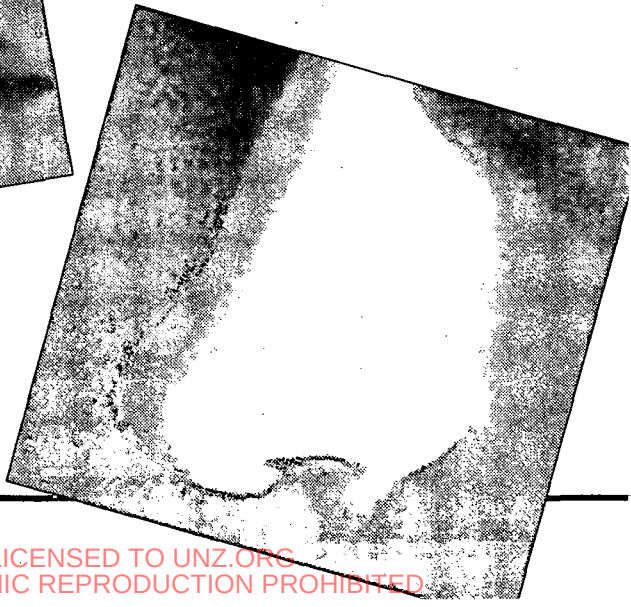
ARMS: ? the form inquired.

Six seemed wise; a click.
Another click for neural implants to
Drive them.

What SKIN COLOR: should I choose?
A question shackled with symbolism
Rich in cultural significance.
My ancestors painted themselves blue
from head to toe
blue
When they faced momentous possibility:
War
and death.

I scrolled SELECTION to
OTHER.
Inserted WOAD BLUE.





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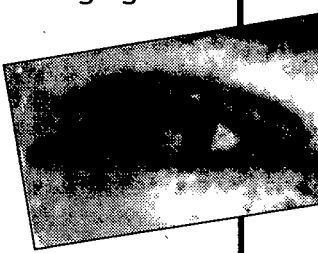
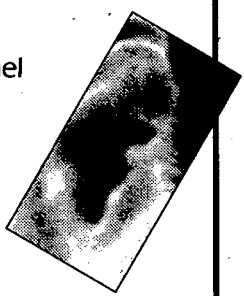
INSIGNIA: ? it asked next, HERALDRY ?
One holo-icon in the palm of each hand
A thunderbolt, for the weather lately tamed
A flame, for fusion harnessed and made slave
A shield, to note our meteor defense
A circle of beads, as symbol of our endless string of days
A Khadga mace, for the power true self-knowledge gave
And finally,
A sword, to mark the division from error,
from Aristotle's broken, insufficient tool;
My hands a celebration of the March of Man;
of *Homo sapiens autotransfigurans*.

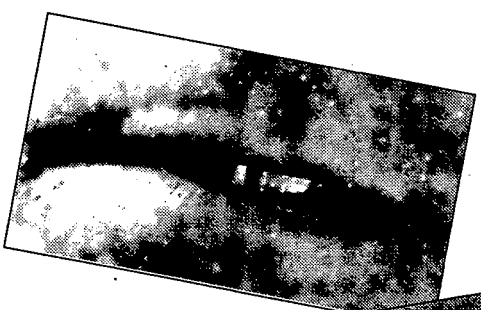


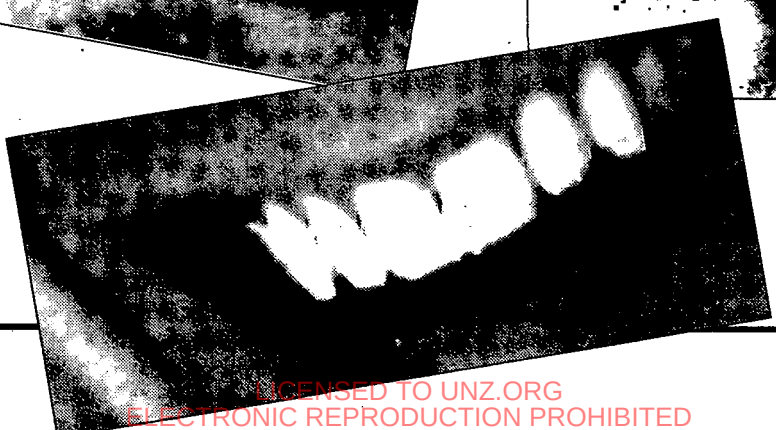
My first day out
sensations still deliciously new,
Scars healed,
Drinking thé kurdique on the Boulevard St-Michel
A couple, passing, frankly admiring
My new aspect and attributes.



Are we not become gods?
She asked him.
Are we not become gods?

—by Timons Esaias





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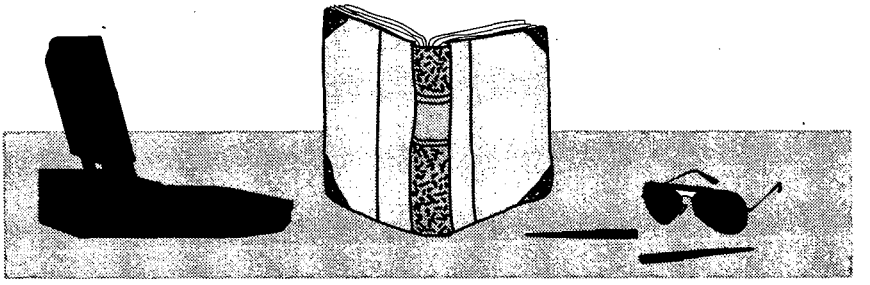
M. Shayne Bell

Our last tale from M. Shayne Bell, "Mrs. Lincoln's China" (July 1994), was a finalist for the 1995 Hugo award. His beautiful new story evokes the African continent of H. Rider Haggard and other nineteenth-century authors. A continent that was so mysterious and romantic to the European explorer that he would not be surprised to find . . .

THE MOON GIRL



"What do you make of this book, Kevin?" François Brissot asked me one evening in the National Archives of Niger. He handed me a book bound in black leather, dusted clean. I opened it slowly, in the middle, but it still crackled. The pages were brittle and crumbling around the edges. It was evidently a journal, written in black ink, the last half of the book's pages blank. I tried to read some of the words in the dim light. We hadn't yet turned on the one light bulb Brissot allows us after dark—the electricity costs the archives too much, and he has to conserve. Though I sat by a window, the sun had nearly set and the light was almost gone. It was difficult to read.

"It's in English," I said finally, having made out a few words.

Brissot laughed and walked off. Of course the book was in English. Brissot hands me everything written in English. I go there to help him recatalog the holdings of his archives, as he thinks of them, left in chaos after the Nigerian withdrawal from Niamey at the end of the Water War. "I am too old to find patience for your English," Brissot had once told me. He reads English, but slowly. Since English is my first language, I can quickly tell what a document is, who had written it and why, and mark it for future filing. I never expected to make it through the archive's English-language holdings that summer. Brissot does not expect to finish sorting out the mess the Nigerians had left him in what remains of his life.

I set the journal on the table in front of me and carefully opened the cover.

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The first page was blank, but the second was signed *Robert Adams* and dated *23 May 1817, Agadez.* It was the journal of an Englishman, of course. English men and women seemed to have walked everywhere in the world, curious about everything, recording the tiniest details of their journeys in the remarkable journals that I, at least, still love to read. I hadn't realized that a European had made it to Agadez that early. Brissot keeps a list of all known European explorers in Niger and their writings in the hopes of collecting, if not the primary documents themselves, at least copies of the journals and letters. I looked around for Brissot to ask him what he knew about Robert Adams, but Brissot was nowhere in sight. I checked the encyclopedias, but found no mention of a West African explorer named Adams, nor was he on Brissot's list.

There is a table and chairs by the encyclopedias, under the one light bulb. I turned it on and sat there to read. The journal was evidently not the first Adams had kept, since the narrative begins *in medias res.* What follows are his words.

23 May 1817, Agadez, in the Lands of the Tuareg

Abdullah and I breakfasted on figs and goat's milk cheese and took leave of our host before sunrise, but the gatekeeper again would not let us leave the city as we had been promised. I stood at the gate with the few belongings left me—principally these journals and my compass—packed in bags tied on the donkey the Sultan had sent us, the faithful Abdullah at my side, he as anxious to depart Agadez after our two-month detainment as I.

I argued with the gatekeeper, using the little Tamasheq I can now muster, since that is what he spoke to us. I demanded to see his orders, but of course he produced none and began to threaten and curse me. Abdullah also spoke with the man, but to no avail. He would not open the gates; he insisted he had orders against it; so I turned the donkey, led it behind me, and slowly walked with Abdullah back to the house that had been our prison these past two months.

Our host, Jubal Ibn Faleiha, stood in the street outside the gate to his courtyard, talking with great happiness and animation to two other Mussulmen all dressed in similar white cotton robes, but when he saw me approaching him again the happiness left his face, though he greeted me and said: "Six times have I blessed you in the name of Allah, Robert Adams, and watched you leave my home to start your journey back to the land of the Christians, and six times have I watched you return to me. Allah be praised."

It occurred to me to ask him not to pray over us the next time we were told we could leave Agadez, to ask him to let my prayers be the only ones offered, but I remembered that Abdullah always prayed to the same Allah as Ibn Faleiha, so I said nothing since in any case prayers of thanks to Allah were certain to be offered upon the slightest hope of word that we could leave.

At noon we learned the reason for our stillborn departure. The Sultan sent a messenger who asked for me, and when I was called into the courtyard he bowed many times and told me the Sultan requested my presence at dinner that night. I told the messenger I would do as the Sultan wished and attend his dinner. After the messenger left, I begged water to wash in from a serving girl of Ibn Faleiha. She pretended not to be able to understand what I

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wanted, though for the past two months I had spoken with her in Arabic, asking her for water and food.

I went through the house asking each person I met for water and finally, back in the courtyard, I met Ibn Faleiha himself and asked him for water. He appeared surprised and put upon by my request, though it must have been he who had ordered his servants not to attend to my needs. I felt uncomfortable confronting him as I was forced to do, knowing that our relations had become strained, but the Sultan had ordered me to stay in his home—a punishment, Abdullah told me, for Ibn Faleiha having advised the Sultan privately against one of his marriages, a marriage the Sultan had been determined to consummate, and which he had, despite his subject's well-meaning, if ill-conceived, advice. History teaches us again and again how unwise it is to stand between one's sovereign and a woman.

I tried once more to speak with Ibn Faleiha about the cost of my stay and told him that if we were in my own land I would have had the means to pay him for his hospitality, but that I had been robbed, held against my will, and ordered into his home. Indeed, if regular commerce existed between England and this land I would have sent him payment, but that was impossible. I again offered to perform whatever service he might ask of me in his house, but he appeared shamed by my words and, remembering his duties as host, ordered that I be given water, which I was shortly, in a tiny jug, with which I made do.

After washing, I dressed in my worn trousers, shirt, and jacket and in the early evening walked to the Sultan's palace and was admitted and taken to a room in which the Sultan sat with three bearded advisors, one of whom handed me paper, pen, and ink and asked me to draw a map of the streets of London, not forgetting to mark the principal buildings, the palaces, the walls and fortifications, where they might stand. I began my task by drawing in the parks, which landmarks I use to orient myself in London, but the advisors stopped me to ask the purpose of the parks. They would not believe that they exist for beauty's sake, to rest human eyes from the sight of stone, glass, and metal. They determined amongst themselves that the parks were maintained against a time of siege when the forests in them could be cut down for wood. I told them there was no wall around London, that the city is too vast for a wall, but they would not believe that any city could be greater in size or fortification than their own Agadez nor that the royal English capital would be unwalled. I, not wanting to insult them or try their patience, did not tell them that Agadez, with or without its wall, could fit comfortably inside the limits of Hyde Park.

For two hours they questioned me on the particulars of London, such as the location of the King's Palace and the size of it, which again they would not believe, often asking me the same or similar questions a second or third time, as if to check the truth of my reports, to discover whether I varied in my telling. It began to seem as if they were gathering information from me with which to prepare an invasion of England, and despite my situation the entire exercise amused me greatly. I held back nothing and told the Sultan stories of the great buildings of London, of the ships docking there from around the world, and of the vast seas over which those ships had traveled. My stories amused the Sultan in turn, and he laughed many times, though his advisors regarded me gravely. When they were satisfied with my stories, or tired of them, one of the advisors carefully rolled up my map of London and tied it with leather straps. They all looked at me as if I had given them great and secret knowledge. I laughed inside myself to think that in their hearts they might hope one day to sack London, which suddenly, I realized, was the reason

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for their keeping me in Agadez: they feared the intimate knowledge of *this* city and *their* lands that I would carry out with me and the treacherous uses to which such knowledge might be put, knowledge no European—no Christian—before me had ever had. I began to wonder whether I would ever leave Agadez alive and thought that, to preserve my life against a time when I might escape, I should give them hints of further knowledge they might obtain from me, never imagining that they could put to practical use anything I might say. I began to talk of the seaward approaches to London and the course of the Thames and of that great city across the channel, Paris, a city richer than London, I told them, and from the whispers of the advisors and the looks of the Sultan I knew that I would not soon be put to death (if that were indeed their plan), but would, more likely, enjoy future dinners in their company.

The hour being late, and all of us quite hungry, the Sultan clapped his hands and servants immediately brought in food and drink. The dinner was unremarkable: mujadara, a roast goat, water, coffee. But the food encouraged the Sultan in his native good humor and in his, I had often hoped, sincere friendliness toward me. He asked me to talk of the Thames or of Paris, but I, continuing with my new plan, talked only of the streets in London that bordered the Thames, and of the bridges over it, not of the course of the river itself below or above London. The Sultan laughed at my descriptions of London's crowded streets and of the noise of the wagons at night, though he thought the making of such noise when men should be sleeping uncivilized. "But perhaps you Christians do not sleep at night?" he asked. "Or rather, you do not let your women sleep?" I told him that Christian women do not let their men sleep, and the Sultan laughed.

But suddenly he stopped laughing. He leaned toward me and whispered that he would show me his wives. This sudden intimacy and confidence surprised me. I thought it prudent to encourage him and told him how honored I would be. I imagined the Sultan meant to introduce me to his wives, that he would call them into the room, but instead he led me down a long, narrow corridor to a low door, and beyond the door a black room. The Sultan promptly entered that room and I followed, knocking my knee against a bench, which I sat on, and I saw before me a row of three peepholes. The Sultan was looking through one of them. It shocked me to realize that he wanted me to observe his wives while they slept, but when I looked through the peephole I saw to my further surprise that the women in the room beyond us were not sleeping, but rather bathing in a small, tiled pool.

There were three of them, none particularly lovely, though at that late hour, with their long day ended and apparently unaware of our presence, even the most plain among them displayed a weary, comely peace. I wondered which had aroused Ibn Faleiha's opposition.

They splashed about their pool, and their soft laughter and the sight of them bathing by candlelight aroused me, though I was careful to hide my feelings. I did not know what reaction the Sultan expected from me. To appear too interested in his bathing wives was an obvious danger: these women were above temptation if I valued my life.

The Sultan seemed impatient. He leaned over to me. "One of my wives is very special," he whispered, "a kind of woman you will have never seen in your Christian England."

"Which one?" I whispered back, thinking that even the working women of my country compared favorably with any of these, but the Sultan did not refer to one of the women in the pool.

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"She sits in the doorway on the far side of the room, waiting her turn at the water," he said.

I looked again through the peephole and indeed saw a woman crouched in the shadows of the doorway, still fully clothed in her veil and robes.

"Watch her," the Sultan said.

I wondered why the woman the Sultan regarded with such esteem waited to bathe until all had others finished, but I could think of no reason except, perhaps, disease. The Sultan grew more and more impatient with the time his three other wives took in the pool. I began to think that he would presently shout through the peephole for them to be gone, but he said nothing, and presently they left. We watched them wrap themselves in robes and leave the room. Each of them, when she passed the woman kneeling in the doorway, would not approach her, but attempted to pass her by with as much distance between them as possible. No one spoke to her.

When the last of the three had hurried past, the woman in the doorway stood and approached a bench situated on the far side of the pool, which she faced, keeping her back to us, and she began to disrobe. I started to feel our voyeurism perverted, but I dared not question the Sultan's scruples, feeling that I could not risk his apparent trust in me, arguably worth a great deal toward the eventual salvation of my life, and of Abdullah's. So I joined the Sultan in watching.

First off came a jeweled bracelet, then the veil, revealing—to my astonishment—fair skin and long braids of blond hair, which she untied and shook out and which fell halfway between her shoulders and her waist, her back being exceptionally long. The blond hair particularly surprised me, mine being the only blond hair I had supposed to exist in all the regions of Africa I had visited. I wondered about the woman before me, and her origins, as she untied her robes and let them fall about her feet. What I saw then will remain forever etched in my memory. A raised ridge of bone ran down her back where the spine would be. She turned and stepped into the pool, holding her arms out from her to balance her steps, and where her breasts should have been were two more arms, tiny, folded together. When her chest touched the water the second set of arms opened to swirl the water before her. Her mouth emitted a soft clacking sound, and she sighed as leathery wings lifted up behind her, wings originally hidden in folds of flesh along the bony spine. I saw then that her lips were stiff, that the chin remained strangely immobile while she made the clacking sounds.

I looked away, horrified, and saw that the Sultan was watching me. "Is she not fine?" he whispered.

I could say nothing in reply.

"Look at her," he whispered. "Certainly your kings in England do not have wives like her."

I looked back through the peephole and saw that the "woman," if indeed that is what she were, was preening her wings with a long tongue distended from her immobile mouth, a tongue that reminded me at once of the proboscis of butterflies.

"You are correct, Sultan," I whispered. "In England there are no women like her."

We were quiet for a time, watching. I felt certain it was the Sultan's marriage to this creature that Ibn Faleiha had opposed. "Where is she from?" I asked.

The Sultan drew away from me at once, and I realized I had asked something amiss.

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"Come," he said. "I must keep my little secrets, too."

He motioned me out of the room and softly closed the door behind us. I was glad to be spared another sight of his special wife.

"You have said little to me, Robert Adams, except to request more information about my lands."

I understood then my error. "Curiosity brought me to Africa, that and the desire to learn more about the world we live in," I told him.

"To what end are you, a Christian, curious about this part of the world?"

I thought for a moment before replying. "For two reasons," I said. "First, to establish commerce, if possible and if it seem profitable, between my country and yours. The second reason is entirely personal: to see, with my own eyes, wonders."

He turned and conducted me quickly down the corridor to the room where we had dined and pondered maps of my far-off homeland. "You have seen a wonder tonight," he told me. We took leave of one another, and two of the Sultan's armed soldiers escorted me to the street, where I was left to walk alone to the house of Ibn Faleiha.

I had indeed seen a wonder, I realized, though I did not understand what I had seen. Was this winged creature some sort of person no one in Europe had yet encountered—except, perhaps, in mythology? I thought of centaurs, griffins, the chimera. Had such creatures once existed in Mediterranean regions, withdrawing to some hidden African country, now allied with the Mussulmen? Was our mythology based, after all, on truth? This wife of the Sultan's was not, however, a créature familiar in our mythology, unless the descriptions of one of them had become corrupted in Europe after centuries without contact.

Whatever the case, the Sultan of Agadez evidently regarded the creature as sentient, since he had married her. I determined to learn more about her and her kind before leaving: indeed, I soon realized that such knowledge might be crucial to the safety of my own land, perhaps even to all of Europe. The Sultan's evident plans for sacking London were perhaps not the joke I had at first thought! Allied with an army of winged soldiers—the fathers, brothers, husbands, and sons of creatures like she the Sultan had shown me—the sacking of even the king of England's own palace might not be farfetched. I cursed myself for the imprudence I had shown not only in talking openly and truthfully about the capital city of my nation, but also in drawing a map of it. I would mark it falsely in the future, were the leather straps that tied it ever loosened and that map laid in front of me again.

Such were my thoughts as I walked the dark streets to Ibn Faleiha's. After I lay in bed, I could not stop thinking and find rest. I imagined winged armies descending on London from out of Africa, carrying fire and stones to hurl down upon our homes, businesses, and ships, firing deadly arrows from so high up that our finest marksmen could not strike them in return, kidnapping our wives, sisters, and mothers through the windows of their very bedrooms and flying off with them to fates we could only ponder with horror.

24 May 1817

I woke sick to my stomach, a common event for me in Africa, though I had been spared all illness so far in Agadez. I could only attribute this illness to my gloomy thoughts of the previous night; the realization of my evident im-

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prisonment and, perhaps, mortal danger; and the shock of seeing a living creature out of mythology. Abdullah cursed the Saharan dews to which I must have been exposed during my late night walk from the Sultan's palace to Ibn Faleiha's, but I had felt no dew. The night had seemed hot and dry to me.

I found myself unable to keep down food or water, though I made repeated attempts knowing, as I did, that I soon needed health and strength if Abdullah and I were to escape from Agadez, escape now being, I believed, our only hope.

Because of my illness, I put off Ibn Faleiha's lessons in written and spoken Arabic that we had been prepared to resume. He had never ceased being fascinated that a Christian should want to learn to write and perfect the speaking of the language of the Mussulmen. I decided, however, to mention the Sultan's wife in order to learn what Ibn Faleiha knew of her and her people.

"You have seen her?" he asked, his voice angry at once.

"The Sultan showed her to me," I said.

"He captured her during one of his forays against brigands. The imams would have put her to death at once, but the Sultan not only forbade it, he married her, planning to ally this land with her inhuman kind, though nothing has come of that, Allah be praised."

But if such an alliance were achieved, the military advantages seemed obvious. Ibn Faleiha claimed to know nothing of her origins, and he would speak of her no more.

In the afternoon, a messenger again arrived from the Sultan, and I was again summoned to the Sultan's dinner. I sent word that I was ill, but the messenger soon returned saying that I must attend the dinner, ill or well, so I went. As before, the Sultan and his three advisors met me with paper, pen, and ink and once again requested that I draw them a map of London. "Where is last night's map?" I asked. "I will add detail to it."

"Draw us a new map of the same places," the Sultan commanded, and I had no choice but to draw something. Their open mistrust alarmed me. Clearly they were asking me to duplicate last night's map so that they might compare my two efforts. I could only imagine the consequences to me if they discovered major discrepancies. "Be certain to draw the course of the river you spoke of last night," the Sultan continued.

I picked up the pen, sick at heart. My choices then seemed simple and few: betray my country or incur the swift wrath of the Sultan of Agadez. Betray England I could never do, so I determined to attempt to draw the Sultan's attention away from London. I quickly sketched in the parks and major streets, as I had done the previous night, then Buckingham Palace, "the king's winter residence," I said, as if to myself.

"Where is the summer?" an advisor immediately asked.

"In the mountains of Wales," I lied. "Our winters being exceptionally short, the king moves his capital during spring, summer, and fall to—" There I paused briefly to invent the name of a nonexistent city, "to Utopia," I said, the title of Sir Thomas More's book being the only name for an imaginary capital that occurred to me.

"Tell us of this Utopia," the Sultan said.

And I did. When I drew the map of it, I memorized its details, since I fully expected to be asked to duplicate everything, including the two great rivers that join in the heart of my fictitious city, the massive government buildings, the palaces, the parks, and, since my audience would not believe that any king ruled from an unwalled city, its great wall and fortifications.

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The Sultan and his advisors seemed extremely pleased with my stories and maps. When they judged that I had drawn enough for one night, an advisor carefully rolled the maps and tied them with leather straps. Then, as before, the Sultan clapped his hands, and servants brought food: kouskous, this time; another roasted goat and—a great surprise—wine. The various aromas nauseated me, though I had enjoyed these same foods, if not the heretofore unavailable wine, on many different occasions throughout my travels in Africa. I ate small portions slowly, though no one seemed to notice or care, the wine commanding most of the Sultan's and his advisors' attention. I knew of the Mussulman's supposed prohibitions on drinking alcoholic beverages, but every man there drank freely and made no excuses for the wine. I certainly did not think it prudent to question their disregard of their faith's scruples.

The hour was late, but we drank and ate, then drank more. The Sultan and his advisors became aroused and jovial. "We shall have music and dancing!" the Sultan said. He clapped his hands, spoke to the eunuch who approached, and presently a flutist and drummer seated themselves in an alcove and began playing an exotic, rhythmic music. The eunuch hurried a veiled woman to the arched doorway. She stood there reluctantly and attempted to turn to leave, but the eunuch would not let her. He spoke to her in low tones. I heard none of the words, but he seemed to urge her to an apparently unpleasant duty.

"Dance!" the Sultan roared. His shout startled everyone. The musicians stopped playing briefly and all of us—the woman in the doorway, the eunuch, the three advisors and I—stared at the Sultan.

"She must dance!" he shouted.

The eunuch said something to the woman, who at once straightened her back, lifted her head, and for a moment stood tall and proud. Slowly, she began to dance.

She moved gracefully down the steps, then onto the tiled floor before our table, her hands and body keeping time with the music. Once before us, she began to twirl. Her robes and veil lifted as she turned—and I saw the fair skin of her hands, a flash of blond hair.

I knew then who—or what—danced for the Sultan of Agadez and his guests: the woman from a lost mythology. I felt as if a jug of icy water had been poured over my head. I sobered at once and, shivering, sat up straight to watch the twirling dervish before me.

It was then that she noticed me, and she was curious. She danced close to me when she let her veil fall, and she danced close to me as she loosened the ties of her robes. I studied her face and, though it was not a type of face I had ever imagined existing on this world, I could still read the emotions that played there: unhappiness, sorrow, shame. I did not want to see her forced to dance naked. Even if her people were to become the enemies of mine, I did not want to see her shamed like that. I thought, in vain for a time, of a way to prevent her complete disrobing, but nothing occurred to me better than what I presently did: I began to cough, though my false cough soon turned to a real, and as the real continued I shortly could not stop myself from vomiting.

At once the dancing stopped, the music stopped, everyone stood but me. Without a word, the Sultan left the room. The eunuch rushed forward with rags. I took one of his rags and knelt to help him clean the floor.

"No!" he said, too loudly. "You are the Sultan's guest." He tried to take the rag from my hands, but I would not let him. I was responsible for the mess,

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and I was determined to help him clean it, though it comforted me somehow to find that at least this man still thought of me as a guest here. One by one the advisors left, and when they were gone, the musicians left. Other servants came at once to clear the table. The Sultan's wife stood not far off, watching the eunuch and me, retying her robes. I had stopped her dance, but I had not planned to make such a mess. She crossed to the table, took pen and paper before the servants could clear it away, and wrote on the paper, which she handed to me. *Did I displease you that much?* she had written in Arabic.

It disturbed me to find my actions misconstrued in this manner. I crossed to the table and quickly wrote in Arabic on the same paper, *I saw your reluctance to dance and did what I could to spare you from proceeding. I did not mean to go so far, and for that I apologize.* I handed her the paper. After she read it, she stared at me for a long time. Finally she handed the paper to the eunuch, who also read what we had written. Then it was his turn to stare for a moment. He set the paper on the table. "You are a man of honor," he said. He bowed to me from where he knelt on the floor, which embarrassed me, so I knelt and took up my rag to continue cleaning. The eunuch put his hands on mine to stop me. "Let me do this," he said gently. After I stood, he said, "She can hear and understand our words, though she cannot speak them. Suleiyá," he said. "You must put on your veil."

His words seemed to surprise her—it was as if she were not accustomed to the clothes she wore, though she hurried to comply. Soon the veil covered her head and hid her face in shadow. She crossed to the table and wrote. Her jeweled bracelet tapped the table while her hand moved. I saw that this bracelet was really four separate copper bands, a large yellow stone on the bottom, nearest her hand, then a tiny brilliant blue jewel on the second, small red jewels on the third and fourth. She handed me the paper. *Where are you from?* she had written.

"From a land called England," I said. "It is far from here, and very different from this place. Where are you from?" I asked in return, glad that the Sultan were not present so that I might ask the question and read her answer.

She looked at the eunuch, who looked back at her but said nothing, then she motioned for me to follow her across the room to doors that opened onto a balcony. We stood at the rail, where she studied the night sky for a time. Innumerable stars blazed there. A breeze off the desert cooled the night air, and I became mindful of the dews that constantly worry Abdullah. I was about to say that for my health I needed to return inside, when she pointed northeast to something forty degrees above the horizon—above the Aïr mountains. I pointed at the mountains, but she pushed up my arm till my finger pointed at stars.

That was how she answered my question. I stood, wondering, as she turned and walked back into the room. I shortly followed, but she was gone. Only the eunuch remained in the now almost dark room, clearing away the last of the dishes. Most candles had been extinguished. "I do not understand," I told him.

"Neither do I," he said. He held the paper we had written on to the flame of a candle. When the fire had nearly reached his fingers, he dropped what remained of the paper onto a plate. Soon nothing was left of our communication but ashes and memory. He blew out the candle and left with the dishes. Soldiers came to escort me to the street, and again I was left to walk alone to the house of Ibn Faleiha in the dark night, cool now in a desert breeze. I but-

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toned my jacket to the neck to ward off dews, though once in my own room I opened the window, which also faced northeast, to look at stars for a time. The moon had not yet risen, but the night was bright with starlight. What had Suleiyá, for such appeared to be her name, tried to tell me? Were she and her people not something from a lost mythology, as I had imagined, but descended here from some star or moon?

Forty degrees above the horizon in Africa there are many, many stars at which to point.

25 May 1817

I woke with a fever and other worse symptoms I refrain from chronicling. Two of Ibn Faleiha's serving girls were also similarly ill, and Ibn Faleiha himself complained of a severe headache. Ibn Faleiha told me that many in the city were ill.

After a failed attempt at breakfast, I wrote an apology to the Sultan and sent Abdullah to deliver it. Though he waited at the palace till after midday for a reply, none came. Abdullah seemed troubled after his return, and I asked him the reason.

"I heard men talking at the mosque of thee, O my master," he said.

"What did these men say?" I asked.

"That the illness in the city is thy doing, that thou hast cursed Agadez with some Christian ailment."

"A curse that afflicts the man who says it seems strange and ineffective."

"Indeed," Abdullah said. "But that is not all. A mahdi has arisen here. He preaches in the mosque against thee, against the Sultan's worldly ways, and against one of the Sultan's wives."

"What does he say?"

"That thou and this wife of the Sultan's are infidels and have polluted Agadez. Tragedy will befall the city unless the Sultan repents and cleanses it."

"What does this mahdi say of the Sultan's wife?" I asked.

"That she is a devil whom he has tamed for evil, that one look of her brings a curse, and two hard looks stop the heart."

"That is nonsense," I said. "I have met the woman to whom they must refer. She looks different from other women, but her glance does not kill."

"I only report what men say," he said.

I stood and crossed to the window. "I would leave here at once, if the Sultan allowed it."

"And I would follow thee, for thou, though a Christian, have been good to me."

"Thank you, Abdullah," I said. After a time I asked him if he thought we were in danger.

"I may not be," was all he said.

26 May 1817

Ibn Faleiha rushed into the courtyard shortly after midday with news of carnage on the desert. A caravan of pilgrims returning from the Hajj had been overcome by brigands a day's ride from the city. Everything of value had

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been stolen, and those not lying dead on the sands were gone—kidnapped to be sold into slavery in Egypt or the Sudan. The Sultan had sent a troop to track down the brigands and rescue the enslaved.

Shortly we heard wailing in the streets, from the relatives or friends of those killed or kidnapped, I was certain. I looked out my window and saw bodies carried into the city on the backs of camels, donkeys, and horses. Those who mourned their dead followed them. When Ibn Faleiha and Abdullah returned from afternoon prayer, both looked deeply concerned.

"The mahdi blames this trouble on you," Ibn Faleiha said.

"And on the Sultan's infidel wife," Abdullah said.

"Both are accused," Ibn Faleiha said, in a quiet but angry voice. He stared at me for a moment, then moved to the window to look out on the street traffic. I wondered if he were prepared to believe the mahdi's lies against me. Abdullah continued to recite them and to tell me how the illness had spread. Even part of the desert troop had had to return to Agadez because they were so ill. Whether Ibn Faleiha believed me responsible for such things mattered little since others believed them. My presence in Ibn Faleiha's home put him and his household in danger.

"You have offered to work here in return for my hospitality," Ibn Faleiha said, turning away from the window. "I ask you now to work, Robert Adams. Help me devise ways to bar the doors and windows of this house."

Which thing we did. By night, all of us sat quiet at dinner—Abdullah, Ibn Faleiha, his aged wife, even their servants, and myself—behind barred doors and windows, though we knew that if the city rose against us, we would not survive.

"Abdullah and I must escape from Agadez," I told Ibn Faleiha, after the servants had cleared the table and only he, Abdullah, and I remained in the room. "My life is forfeit if I stay, as is perhaps Abdullah's since he guided me here. My presence, moreover, puts you and your house in danger. But Abdullah and I need help. We need horses."

I thought perhaps he might equip us for escape so he might at last be rid of us and the danger of our presence.

"You do not understand," Ibn Faleiha said. "All our lives are forfeit in Agadez. The mahdi preaches that contagion spreads from *my* home. Who, therefore, is clean within it?"

I understood then how the Sultan had used me to ruin Ibn Faleiha and exact revenge for privately delivered, if unasked for, advice. Perhaps the Sultan had not seen the coming of a mahdi and his preachings against me, but he must have known how being forced to harbor an infidel Christian, as they thought of me, for as long as I had been under this roof, would damage Ibn Faleiha's reputation and make his business, his dealings, even his word, suspect.

A servant placed a bowl of hot water on the table. Ibn Faleiha stood to wash his hands, preparing to retire for the night. "You have brought hardship to my house," Ibn Faleiha said to me, "but it was not your intent; moreover, you have treated me and the customs of this house honestly and with respect. My observations of you over these months prevent me from accepting the mahdi's preachings against you, or my eyes are blind and my heart incapable of judging truly. If Allah is cursing this city, and blame for it to be assigned, the Sultan should bear it, he who brought an unholy woman into this city to marry and cavort with, not you who traveled here to learn and establish commerce; therefore, I tell you this: my son, who lives in Bilma, leads a caravan that should arrive here within days. My wife and I and all in this

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household will escape with him out of this sultanate to Bilma. You and your servant may come with us, to save your lives, but you must leave Bilma quickly and be gone from us forever."

Abdullah fell at once to his knees, thanking Ibn Faleiha profusely, then he turned in the direction of Mecca to offer prayers of thanks. I stood and bowed to Ibn Faleiha, thanked him and held out my hand. I had to explain our custom of shaking hands, but after I did, Ibn Faleiha shook hands with me. I trusted him then. I did not believe he would have shaken my hand had he believed me responsible for the disease spreading through Agadez.

Abdullah and I will sleep as if saved.

27 May 1817

In the late afternoon, the Sultan sent a messenger to inquire after my health, which was greatly improved. I had eaten that morning and kept down the food and water. My fever had broken and, though weak, I could walk. I sent the messenger away with that report. Shortly he returned to bid me to the Sultan's palace for dinner, which invitation I accepted. The eunuch met me at the doors when I arrived, and he escorted me down a different hallway to a room I had never seen, where he closed the door. "You must help us," he said.

The veiled figure of a woman rose from a chair near the window. She held out a piece of paper to me. I took it and read her words. *Please help me leave this city,* she had written. *My people can protect us, if you take me to them.*

"The mahdi will have her killed before he is through, and you, too," the eunuch said. "I have seen this sort of thing happen before, as it did some years past when a different mahdi urged the Hausa driven from this city, and many Hausa killed or enslaved."

"Where are your people?" I asked Suleiyá.

She took the paper, dipped a pen in the ink bottle on the table, and wrote: *They camp in mountains northeast of here.*

"How many?" I asked.

Eighteen, she wrote.

That's all! I thought. Clearly she and her people posed a minimal threat to England and Europe. I now had answer to that question, though immediately it occurred to me that her people might be nomadic, flying in small groups from aerie to aerie, and that the total of all such beings might number far more than nineteen. "How can so few protect us?" I asked.

From inside our—and then she had written a word I could not read. I handed the paper to the eunuch and asked him to read the word for me.

"This is the word for boat, ship, or craft," he said, and he handed back the paper.

"Is there a river beyond the mountains?" I asked, wondering whether the Nile, perhaps, had its source in the Aïr. If that were the case, and if we sailed down it to Cairo, I could arrange passage home—and forever be remembered as he who had discovered the Nile's source, he who had solved that great mystery and lived to profit from it—but Suleiyá shook her head.

"There is no river," the eunuch said. "She has ever described whatever brought her here with this word. No one understands but she."

Suleiyá took the paper and wrote: *My people should have repaired our ship and come for me before now. I am sick with worry as to why they have not. If*

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you cannot come with me, at least help me find some means of escape so I might go to them on my own.

While I read those words she sat disconsolately in the chair. I considered my options: escape to Bilma with Ibn Faleiha and the company of an entire caravan, which offered considerable protection, or escort Suleiyá to her eighteen people and their "ship" in the mountains to unravel there a great mystery. I chose the mystery.

Briefly I explained Ibn Faleiha's plan for our escape. The eunuch and I arranged to be in daily contact through Abdullah so that I could apprise them of the time of our departure. The eunuch and Suleiyá would find a way for her to leave the Sultan's palace and come to Ibn Faleiha's when I sent word.

If the ship is repaired, we will fly you home to your England, she wrote on the paper.

I had little time to wonder at that. "Now you must hurry to the Sultan!" the eunuch said. "He will question your delay."

But the Sultan seemed not to have noticed the few minutes I had spent with his wife and the eunuch. I drew for them a second map of my Utopia, adding many imaginary details.

We again ate at a late hour. This time, however, I did not become ill. As I prepared to take my leave, the Sultan looked long at me. "You have entertained me well," he said. "I did not think a Christian capable of that."

I wondered at those words as I walked home alone. They seemed odd to me, and I considered their implications. Suddenly I heard movement in the shadows against the building ahead, then low voices. A group of some ten men dressed in black robes stood waiting there, probably for me. I was unarmed and outnumbered. With a shout, I turned and ran back toward the palace and the assistance, I hoped, of its guards. But I found the doors barred. Though I knocked repeatedly, no one came for some time.

My assailants fell upon me and, despite my best efforts to fight, beat me with clubs till I thought I would surely die. I was knocked to the ground, where I held my head in my hands to try to protect it. The blow from one club broke the fingers of my left hand, but just as that happened, the doors opened and the guard rushed forth. My assailants scattered and ran away down dark streets, some pursued for a time by the guards. I was dragged inside, where the eunuch dressed my wounds. "You are lucky to be alive," he said.

I wondered how long I would continue to be lucky. I remembered the Sultan's strange words—portentous, they now seemed. The lack of guards outside the palace and their slow response meant that perhaps they had hoped I would be killed—the mahdi appeased, the Christian dead, the Sultan spared an order, somehow painful to him, for my execution.

I could walk. The guard escorted me to Ibn Faleiha's, where Abdullah and others fussed over me till a late hour.

3 June 1817

After a week I have healed enough to attend again to this journal. I wrote the entry for 27 May today, as if I had written it that night.

Two of my ribs are apparently broken, besides my fingers. Most of my body is still bruised and sore. But I am alive, healing, and, as the eunuch said, lucky. The mahdi has praised my attackers in sermons all this week.

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Abdullah is just returned from the caravansary where today the son of Ibn Faleiha will finish conducting his business and depart Agadez, taking with him his mother and the servants of Ibn Faleiha, none of whom should evidently be missed for a time. By night, he will return for Ibn Faleiha and my party. The eunuch is to escort Suleiyá to meet us then, and we will all climb over the wall by cover of darkness and make our escape—the eunuch intending to accompany Ibn Faleiha to Bilma, as he fears he will be implicated in Suleiyá's disappearance.

Abdullah tells me that the horses he and I will ride are fine animals, tan Arabians. "You must return these horses to my son," Ibn Faleiha told me. "They are worth a great deal." I do not doubt his words, and I promised to return the horses, God willing, after I had delivered Suleiyá to her people. I hope to be able to hold reins during the wild ride we will surely have to the Aïr mountains.

Ibn Faleiha is furious with me for having promised to help a Sultan's wife escape certain death—"This Moon girl!" he called her. "This unholy creature whose presence in Agadez I opposed. You will be pursued. I can only think that, with this rash deed, you will draw the Sultan's army after you and deliver us. For that, perhaps, I should thank you, and for that reason alone will I allow you to assist her."

Abdullah refuses to go to Bilma and insists on accompanying me on this mad journey. I can only imagine what he will think when he sees Suleiyá's face and, perhaps, wings.

I am sending these journals with Ibn Faleiha, since in our saddle bags is room for only food and water. Abdullah, Suleiyá, and I must travel lightly. My plan is to reach Bilma eventually, take up this journal, and write in it an account of all that befalls us in the coming days and of the wonders I might see.

The sun has just set. From my window, by the last dim light of day, I see the eunuch and a veiled woman approach this house. Abdullah and I risk much to protect this woman who is not human, and to solve her mystery.

Our plan is afoot. Soon all of us will have set off into a desert filled with brigands, pursued by a Sultan and his armies. Abdullah has spent much of the day in prayer.

I go now to join him.

The rest of the journal is blank. I found François Brissot sitting on the floor in the stacks, sorting papers from a cardboard box into neat piles. "Where did this come from?" I asked.

"From the archives of the mosque at Bilma," he said. "When the government closed that city, the mosque's records ended up here, just in time for the Nigerians to scatter them."

"Have you read it?"

"Over the last six days, slowly, of course, and with my French/English dictionary nearby. I'd never done more than glance at the records from Bilma before now, and was surprised to find anything in English among them."

"Were other journals or papers with it?"

"Only this, so far." Brissot motioned vaguely at the boxes of papers and the stacks of books he had spent six months simply picking up from the floor. "Who knows what we will discover as we keep sorting and cataloging," he said.

It was late. While Brissot locked up for the night, I reread Adams's May 24

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entry with its description of Suleiyá's bracelets, thinking that I had seen something like them in Niamey, but I could not remember where. Brissot and I live in the same general direction, so we walked together for a time. I stopped Brissot on a street corner and pointed up at the night sky northeast of us. Niamey lies almost directly southwest of Agadez. You can't see the Aïr mountains from there, but you can of course see the stars of that quadrant of sky.

"What would we find in the Aïr if we went looking?" I asked.

"God knows," he said.

In my room that night, I opened my window to look at the stars. The breeze off the Sahara was hot and dry, as always. I thought of Robert Adams and his brave plan which had evidently not worked. He had never arrived in Bilma to take up writing again in his journal. But what had happened to him, Abdullah, and the "Moon girl"? Did the Sultan recapture them? Were they attacked by brigands? Had Suleiyá's people left her—and what was she, after all? I had little hope that we would ever learn the answer to these questions. Some two hundred years later, how could we solve the mystery Robert Adams disappeared with?

The next evening, after work.

I walked to the National Museum to study its displays of jewelry from the Sultanates, thinking that maybe here I had seen bracelets like the ones Adams described. But the oldest items on display from the Sultanate of Agadez were gold and silver necklaces dating from the 1850s. I asked the curator whether the displays were rotated, thinking that maybe other pieces were in storage now, not on display, but she assured me the museum's holdings from the 1800s were small enough to be kept on permanent display. They rotated nothing out of the cases. I described the bracelets Suleiyá had worn, but the curator said they did not represent any Sahelian design she was aware of, past or present.

I left the museum disappointed. I told myself it was unrealistic to hope to find Suleiyá's bracelets, or something like them, but even so I felt more and more certain that I had seen something like them in Niamey. I just could not remember where.

Five days later, in the central market of Niamey.

I'd become acquainted with a woman named Mariam Yacoub and her three sons, Abdullah, Nasir, and Idrees, who import fruit from Gabon. Mariam had promised me mangoes on Saturday, so on Saturday morning, early, I walked to her stall. I wanted to buy the mangoes first, before they sold out, then wander through the jewelers' stalls searching for something that looked like the bracelets Adams had described.

The mangoes had come. They were set out in wooden crates stamped with the bright red ink of the Ministre d'Agricole du Gabon and the many black and red inks stamped officiously on the crates at all the borders they had crossed on their way to us. Mariam stood and held ripe mangoes for me to see as I walked toward her, but what made me stare were the bracelets she wore: two narrow, copper bands, one with a large, yellow stone, the other with a

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small red jewel. She had surely worn them before. It was here that I had seen bracelets like those Adams had described.

"Where did you get those bracelets?" I asked her in French.

"I thought you were coming for mangoes," she said.

"I am!" I said. I explained about Robert Adams's journal and its description of the bracelets a Sultan's wife had worn, telling her that he had described four copper bands, not just two, one of them with a blue jewel.

Mariam stared at me, then called her youngest son. "Idrees," she said. "Idrees!" She walked off, looking, evidently, for Idrees.

"Monsieur," Abdullah, her oldest son, said from behind his fruit stand. "The mangoes."

I purchased six, and Abdullah packed them carefully in the cloth bag I'd brought to the market. Mariam returned then, Idrees at her side. "Please come with me," she said. "I have something to show you."

We walked through the market to the jewelers' stalls and stopped at one, where Mariam embraced another woman. "My sister Ghadda," she said, introducing us—and, behind Ghadda, among her displays of jewelry, were three sets of bracelets that matched Robert Adams's description of Suleiyá's.

I smiled and bowed to Ghadda.

"Show my American friend the bracelets on your wrist," Mariam said.

Ghadda hesitated, then held out her left wrist. On it were two copper bands, one with a small red jewel, the other with a tiny blue one.

"Ghadda's two and my two are the originals," Mariam told me. "Our mother gave them to us. These others are copies."

"Do you wish to buy a set?" Ghadda asked me. "They are beautiful, though simple. The jewels are rubies and a sapphire." She handed me a set. "The yellow stone is from Eritrea."

"Kevin tells me he has read about these bracelets, that the wife of a sultan once wore them," Mariam said.

The copies had Arabic writing around the base of the yellow stone. "Is there any writing on the originals?" I asked.

"On this one, yes," Mariam said. She took off the bracelet with the yellow stone and handed it to me. Faintly, around the base of the stone, I made out Arabic letters. That disappointed me. I'd hoped, if there were any script at all, for it to be unintelligible.

"It is a verse from the Koran," Mariam said. "My grandmother had it engraved there, 'This eases the afflicted heart,' from the story of the death of Ibrahim, the prophet's little son, and how caring for a grave does not benefit the dead but comforts the living. It is also what Ghadda engraves on the copies she makes."

I looked at her. "This bracelet had no writing before then?"

"Grandmother told me when I was a little girl that there had been writing on it, but that no one could read it. She had it replaced with this verse."

I compared the originals with the copy. The copy appeared to be exact, and beautiful, as Ghadda claimed. I bargained with Ghadda for the copy, but not very hard, and ended up paying too much for it. "How did the originals come into your family?" I asked Mariam, while Ghadda made change.

"They were a gift to our great-great-great-grandfather, who came from Morocco to this land."

"And who gave them to him?"

"No one ever told us the wife of a sultan," Ghadda said, handing me a few coins.

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"Did your ancestor come here guiding an English explorer?" I asked.
"Surely he was French," Mariam said.
Of course they were from Bilma.

Brissot discounted the bracelets as coincidence. "Some old North African fashion," he claimed, but I wonder. I've asked Brissot to watch for anything else from the Bilma archives, hoping that perhaps some written account of Abdullah's has survived, but as I continue to volunteer in the chaos of the archives, surrounded by piles of trampled and torn books and papers and manuscripts, many burned for heat while the Nigerians camped here, I have little hope. If such a manuscript ever existed, and if it somehow survived the occupation, it may be years before Brissot and his staff find it.

But I feel convinced that Abdullah, at least, survived the "mad journey." Mariam and Ghadda knew little else about their ancestor, the guide from Morocco. But they promised to ask their mother, who is crippled with arthritis and spends her days in a tent in the camps that ring Niamey, whether she knows anything else.

Two days later, at Mariam Yacoub's fruit stall.

"You must come with me to my mother, Kevin," Mariam said. "She claims to have been waiting for someone to ask about our ancestor."

Ghadda stood there, with Mariam's three sons, and after they had closed their stall, we all walked to the camps and the tent of their mother and grandmother, Hanna Abdullah. She reached up her hands to me and pulled me down beside her onto a worn carpet.

"You are a Christian?" she asked.

I nodded, a Christian by birth, at least.

"I thought it would be a Christian who would come asking about my great, great-grandfather. A mahdi would have cut out his tongue for blasphemy if he had kept telling his story, so he stopped telling it generally, but he told his children, saying that someday someone would ask, and that then they could tell it. They told their children, who told my mother and uncle, and I have told my children, since death seems near for me and no one had come asking for the story before you."

"You surprised us, that day in the market," Mariam said. "We counseled with mother before we decided to let you hear the story."

Hanna told me her story, then. What she recounted matches, in general detail, Robert Adams's narrative, down to the description of Suleiyá, except that she believed Robert had been French and Suleiyá an angel. Allah, she believed, had sent Robert to Agadez to bring out Ibn Faleiha's household before the plague of 1819, and to settle Abdullah in this land, where he eventually married Ibn Faleiha's youngest daughter.

"The angel took the Frenchman," Hanna said. "She gave Abdullah her bracelets as a benediction, and he stood on a mountain ledge to watch her take the Frenchman into the sky. It was for saying that—that an angel had taken a Christian to heaven—that the mahdi would have cut out his tongue. But all of us, Abdullah and Ibn Faleiha's descendants, see Allah's hand in this. What do you make of it? Why have you come asking?"

How could I tell her? I was simply curious, while this story had become part of her faith. I had wondered, of course, whether here we might find evi-

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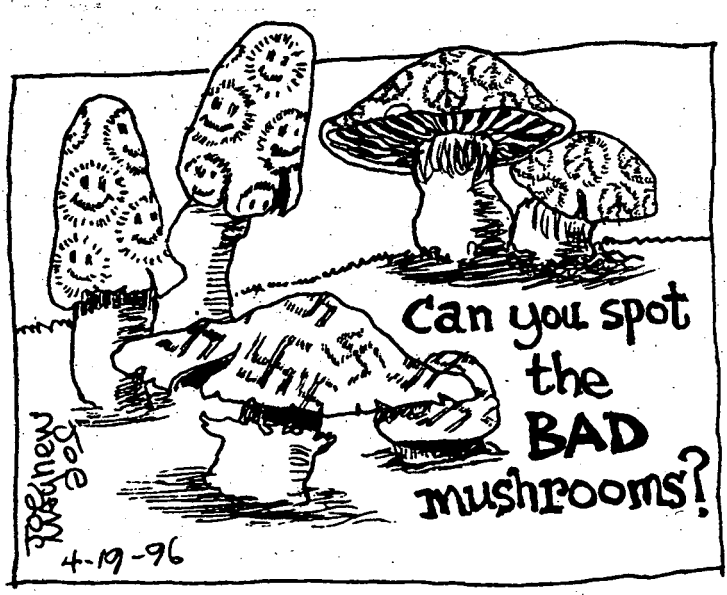
dence for something almost too good to hope for, something almost like Hanna's angel. I suppose the story can mean many things. I thanked Hanna for telling it to me, and told her that Allah must have wanted her family to do a special work in this land, if he had brought Abdullah here and saved Ibn Faleiha's household, even if to do all that had meant calling someone not of their faith to help bring it to pass. Hanna smiled at me then.

"Others will probably want to talk with you about this," I told her, thinking of François Brissot, thinking, too, of possible tests someone might someday want to run on the bracelets.

Brissot scoffed at all of this and would not pursue it. He *does* have work enough for the rest of his life.

So I have written this account, appended a transcript of Robert Adams's journal to it, made a recording of Hanna recounting her story, and keep the copy of Suleiyá's bracelet with all of that. I will tell this story to whomever I can, if I think he or she able to do something with it—run the tests, scour the Aïr, interview Hanna and her descendants in depth. If I find no one, I will hand this account to my nephew, and ask him to do with it what I have done. Maybe someday, someone will ask one of us about it, or we will ask the right questions.

I often look at stars now. I stand at night in the hot, Saharan breezes to look at them. Forty degrees above the horizon in Africa, there are many, many stars. ●



Cartoon by Joe Mayhew

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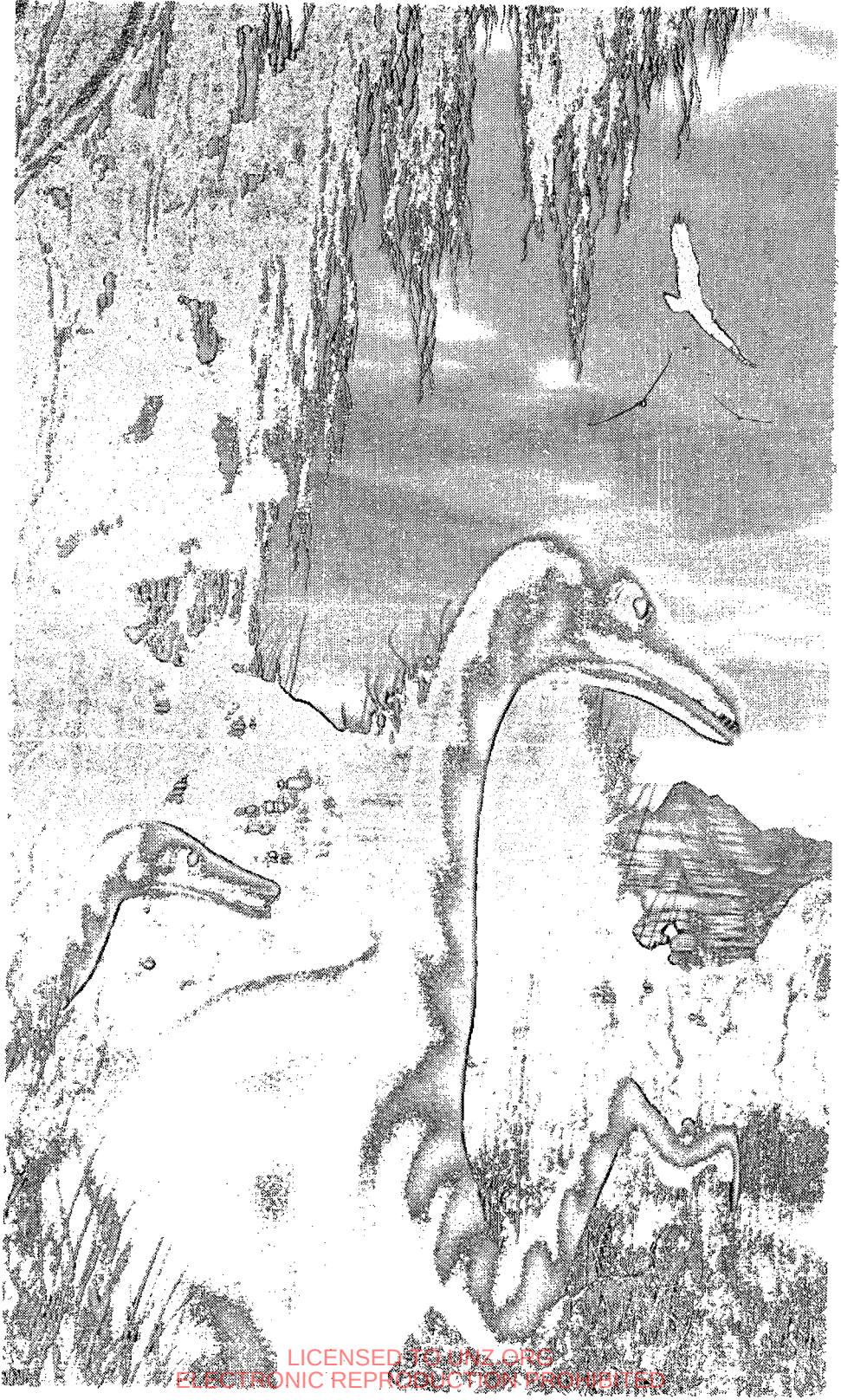

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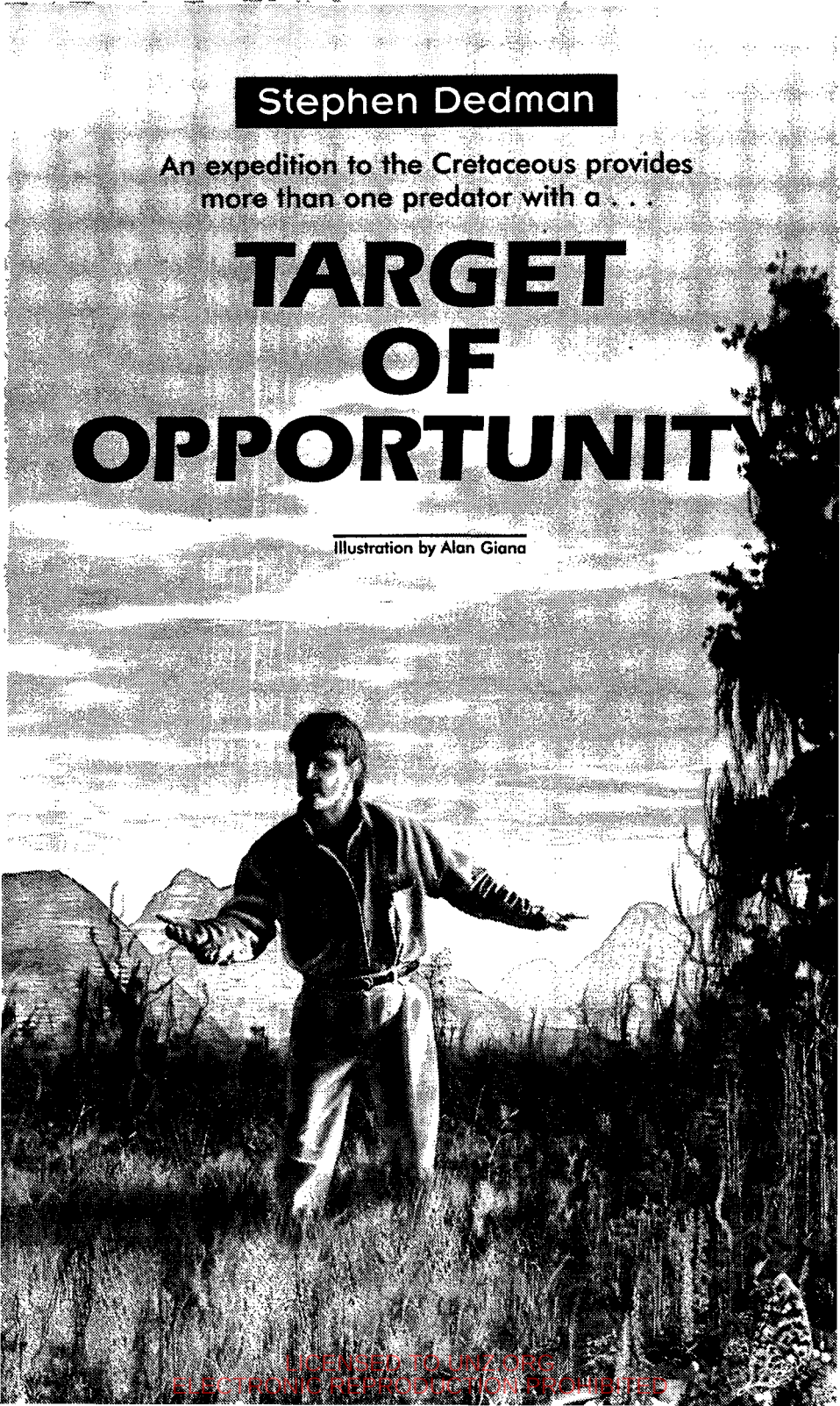
Stephen Dedman

An expedition to the Cretaceous provides more than one predator with a . . .

TARGET OF OPPORTUNITY

Illustration by Alan Giana



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The cockroach was slightly smaller than her foot, but it was large enough to make the blonde scream and keep screaming until after the rest of the party had recovered and begun laughing. I could've explained that none of the cockroaches here/now carry any diseases that are dangerous to humans, but I knew it wouldn't make any difference; it never does. Someone would be bound to trot out the theory that it was roaches, migrating across the land bridges, that would wipe out the dinosaurs, and that's a symbol too powerful for any logic to stand against, even though it's never been proven.

The blonde was still red-faced when we walked inside, and I half-expected the sight of the borogove to start her screaming again; instead, she dropped her backpack, hunkered down, and began talking to him in a thick but beautiful accent while her husband hung back. "What's her name?" she asked, the accent gone.

"Bruno," I replied.

"How big does he grow?" asked her husband, loudly. He was taller than she was and much taller than me, and heavily muscled in a top-heavy way that always reminds me of therizinosaurs and Neandertals and gridiron players. His skin and hair and eyes were a pale brown that seemed to blend into any background like smart camo. I wondered if the screaming had been exaggerated for his benefit. I could be wrong—a lot of intelligent people have a phobia of cockroaches—but it didn't improve my opinion of him any.

"He's about full grown, but females are bigger."

"What does he eat?" asked the blonde.

"Anything smaller than he is," I said, a little sourly. "If there's any food in your pack, he'll find it before you can say *Borogovia holtzi*." Bruno looked hurt, but it was true; he's as inquisitive and unethical and almost as intelligent as a cat. His legs and flanks and face are striped like those of a tabby, he stands about a meter tall, and he's easily domesticated by dino standards, meaning that he's friendly as long as he's well fed. We keep him around to keep the insects down and remind the travelers where and when they are; it wouldn't be the Cretaceous without dinosaurs. Bruno could kill a human in a fair fight, but when did we ever fight fair?

The husband was admiring Bruno's claws. "How closely is he related to the troodons?"

"They're ninety-something percent similar genetically, but Bruno's not local—he's from Mongolia. A friend at the hostel there gave him to us; there were one female and two males in the clutch, and the males were always fighting."

One of the women laughed, and the blonde asked, "Is he as smart as the troodons?"

I shrugged. "I wouldn't know."

"You don't believe these stories about troodons making tools, then?" asked the husband.

"I've never seen it," I evaded. The blonde looked crestfallen. "I've seen them hunting in packs, using ambush techniques, and I've seen them carrying food—mostly carrion—but that's all. It's a long way from tool use, much less tool making. Is that why you're here?"

"*She* is," the husband snorted. "I'm more interested in doing some hunting. When can we go out of the dome?"

"Any time you like," I replied. I was beginning to dislike this one more and more every time he opened his mouth; why do so many intelligent, beautiful women marry such total dorks? "Closest exit's down Horner Street, turn left

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on Sawyer, right on Russell. I recommend you take a respirator mask; oxygen content outside is higher than you're used to, and it may make you overconfident."

"Is it dangerous?"

"Not really; we only lose two point three people per year, on average. Dinos don't come too close to the city—most of them have zero curiosity, and I don't think they like the smell—and the pterors won't bother you unless they think you're already dead or dying. None of the snakes are really dangerous, but don't go swimming in the rivers; some of the crocs grow close to twenty meters long. But the local wildlife's already learning to fear us; the biggest animals you're likely to see are the dragonflies and butterflies, though they're pretty spectacular. If you want to see dinosaurs, you take a flier."

"These two point three victims," said the husband. "What sort of dinosaur kills them?"

"Topsies—hornfaces—mostly," I said. "Some tourists go too near the herds, and spook them. And sometimes it's difficult to tell how the people died, especially if the scavengers get to them before we do. About one in ten are never found at all. Now, let's get you all checked in."

A lot of people come to Maia City for the dinosaurs, of course, but mostly we're a stop-over, a waystation. It's not possible to make a leap of less than twelve million years (please don't ask me why not, I just work here), and more energy-efficient to go back or forward seventy or even two hundred million. It's something like the slingshot effect they used to use to boost the speed of unmanned spacecraft, but not quite, and something like flying around the world instead of *through* it . . . anyway, anyone wanting to see something like the Little Big Horn or the Seven Wonders of the World or the Mediterranean being flooded has to go via a waystation in the past, then back to their intended time. The same for the return trip. And since stations and cities are hideously expensive to build and maintain, and Maia City has more to offer than the others, we get most of the tourist trade. Most of our guests stay for a few days, take a flier out to see the topsy and hadro herds or the pteror nests and maybe get a glimpse of some of the predators from a safe distance. Only students stay for more than a few days, and most of them choose to come here rather than the Hilton.

The blonde's name was Sondra, her major anthropology (I'd guessed it wasn't entomology), and she was headed for early Pleistocene Asia to study the technology of *Homo ergaster* for her master's thesis. Her muscle-bound husband was Kevin, nominally a business student (his father and grandfather had both been major financial contributors to the college), and he was obviously here mostly to keep an eye on her. Picking her up was apparently the only thing he'd ever done that impressed his father and older brother, and he wasn't going to risk losing her, which was why they'd married so young. I learned most of this from Amy, who was writing her dissertation on predator/prey ratios throughout the Mesozoic and had an excellent reason for detesting Kevin; he'd date-raped her when she was a sophomore. Amy was attractive in a dark, elfin sort of way, and since she was friendly and unattached and obviously intended to stick around for a few months, we ended up spending the night together. It was hardly her fault that I kept thinking of Sondra.

My room was little different from any other double in the hostel. I've never been one for souvenirs, or any other possessions, and the room contained

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nothing but a bed, desk, closet, chair, and the inevitable dinosaur holoposters—excellent pictures of *Maiasaura* and *Anatotitan*. "How long have you been here?" Amy asked, as she picked her clothes up from the floor.

"Seven years."

"You don't look that old."

"Don't you believe it," I said. "I was born in 1962. I could be your great-grandfather."

"I wish you had been," she retorted. "I'd love to have inherited your eyes. Where are you from?"

"Vietnam. Little village called My Lai. I ran away from soldiers one day and crashed into an observation post, full of American history students watching their ancestors acting like monsters. I don't know how I got in, I had no idea of what anyone was saying, but they decided that they couldn't just send me out to be killed." I can still remember the girl who'd held on to me while everyone else was arguing, the first blonde woman I'd ever seen. "So they took me home. I became something of a celebrity about the time you were born, the first war orphan in decades, and a couple who worked for ChronCorp adopted me. ChronCorp ended up giving me a scholarship with a two year bond, and when it ran out, I stayed. What do you want for breakfast?"

"Can the eggs be trusted?"

"I can make an omelet you could *swear* came from a chicken."

"And can you take me to see some of the dinosaurs, later?"

"If you can wait until after lunch, sure."

To my surprise and delight, Sondra came with us rather than accompanying Kevin on his hunting trip. I reminded her that we wouldn't see any troodons unless we stayed out until nightfall—troodons were dusk feeders, with night vision that would do credit to a cat—but she didn't even hesitate.

The three of us flew out to the floodplains near what would one day be Hell Creek, Montana, where Amy was able to pick out predators among the great herds of herbivores—a daspletosaurus waiting in ambush by the water, biding its time for something small and slow enough to take with one bite; a phobosuchus, a crocodile nearly fifteen meters long, sunning itself on a sandbar while small pterors picked parasites out from between its teeth (not a job I'd relish); a small pack of mottled dromaeosaurus, sickle claws hidden by the undergrowth. A pair of ostrich-like dromiceiomimus sprinted away from us as we glided overhead; I clocked their speed at sixty-six klicks on the straight, and Sondra filmed one of them snapping up a drab butterfly without even breaking stride. A moment later, I realized they were running toward a small flock of birds. "Vultures," said Amy. "Something's dead."

I steered the flier over to where the scavengers were gathering. The "something" turned out to be a nodosaurid, probably an *Edmontia,* but it was a little late to be sure; a dryptosaurus was using its can-opener claw to pry the armor plates from its back. It might have found it dead, or it might have killed it itself, or it might have intimidated the real killers away, as lions and tyrannosaurs do. A few stygivenators and smaller carnivorous dinosaurs kept their distance, waiting their turn.

We watched until the sun started to set, so that Amy could count and identify the scavengers, and then I headed back to the city despite Sondra's protests. The flier was solar-powered and could stay up for most of the day, but its battery was limited. A few minutes later, Sondra screamed dangerously close to my ear. "Down there!"

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I looked, and saw a small pack of troodon running toward a clump of swamp cypress. "What?"

"One of them had a spear!"

I turned to Amy, who shrugged. "I think it was carrying *something*," she said.

"Where is it now?"

"It ran back into the trees. Are they scared of fliers?"

"If they've got any sense, yes; most hunting is done from fliers." The other troodons disappeared between the trees. "Did you film it?"

"I hope so," Sondra wailed; she pressed the playback button, looked into the viewfinder, and smiled weakly. "It *looks* like a spear," she said.

Kevin was in a foul mood when we returned, muttering about cheap Chinese lasers and the embargo on bringing your own weapons through the machine, and I suddenly realized why his surname was familiar—his family had been making small arms for generations before I was born. He was even less impressed by Sondra's snapshot than we'd been, and less successful at hiding it.

The major problem with the picture was that the spear—or length of bamboo—was on the far side of the troodon's body, and you couldn't see whether it was holding it, or whether the end was lifted clear of the ground. It didn't help that it didn't look much like a spear, either. "If dinos made spears, wouldn't we have found one by now?" asked Kevin, a little sullenly.

"Not if they were just made of wood or bamboo," Sondra insisted. "Wooden tools don't survive like stone ones. It's like *ergaster* in the tropics; they probably had wooden spears, clubs, carrying bags, maybe even canoes or rafts, boomerangs, bolas . . . how much would survive of a bola, or even a wooden bow strung with sinew, after sixty-six million years?"

Kevin thought about this. "Forget sixty-six million years. How long've tourists been coming here? Twenty years? How come nobody's seen this before?"

"Seen, but not photographed," I answered, before Sondra could speak: she shot me a look of what might have been gratitude.

Amy laughed softly. "There's a story my grandfather told me about baboons, when I was a little girl," she said. "He said they were intelligent, even knew how to speak our languages, but were careful not to let white men hear them in case they made them work."

"Do you believe that?" asked Kevin.

"Not any more, but I can't disprove it."

Kevin turned to me for support. "You've been here for years, you know about dinosaurs; what do *you* think?"

I could've lied, but what would have been the point? "I don't know. Why would troodons *need* spears? They have claws. Weapons are for weaklings." Kevin glared, and turned white. "Sorry, I put that badly. Our ancestors needed to make weapons because their claws and teeth were too small to be effective for killing, and there were plenty of predators who could out-run and out-climb them. I suspect they weren't much smarter than baboons or gorillas; all they had were good grasping hands and an upright gait. If they *hadn't* picked up antelope horns and thighbones, instant daggers and clubs, we wouldn't be here. Troodons have the hands and the bipedal walk, but they also have pretty nasty toe claws, so they don't really *need* spears."

"Extra reach," Sondra suggested. "Enough to attack an ankylosaur without getting too close to the tail. Or maybe it's a javelin."

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"Maybe, but that doesn't look like much of a point—it's not stone-tipped, or even fire-hardened. And look at Bruno." The borogove looked up at the sound of his name, realized that no one was about to feed him, then curled up again. "Those shoulders aren't built for a strong overarm throw, and you'd need a lot of force to put sharpened bamboo through the average dino's hide—unless you're dealing with dinos that are even smaller than the troodons, and the troodons can run most of those down without much trouble."

Kevin stared at Bruno, and nodded. "I'm sorry, honey," he said, magnanimously. "But I'll tell you what; I'll come with you tomorrow, take a rover back to the same place, go into the forest and see what we see."

Amy rolled her eyes; ain't we got fun? "Okay," I said. "But it won't be a hunting trip; *I'll* carry the gun, and you don't use it without my say-so. Understood?"

I saw Kevin the next morning while I was having my shower. He enthused about hunting while he combed his hair, and when he noticed that I was replying in monosyllables, tried changing the subject to women, then to football. "You don't like me much, do you?" he finally asked, his expression slightly puzzled, his body language defensive, as though it was important to him that I like him. "Is it something I said, or just because I'm rich?"

"Nothing to do with that. I'm just prejudiced when it comes to hunters and guns," I admitted. "I know what it feels like to have someone chasing me with a gun, hunting me. My sympathies lie with the prey, especially if it can't fight back."

His brow furrowed as he considered this for a moment. "I'd never hunt humans," he said, "but these are just big animals, not even as smart as deer."

I shrugged. "I said it was a prejudice. Besides, I don't think we have much in common."

He laughed at that. "You like women, though, don't you?"

"Sure."

"Well, that's something." He was silent for a moment. "Have you ever tried it?"

"Tried?"

"Hunting."

"No." I switched the shower from water to sonic.

"You've lived here for years and never gone hunting?" he yelled, over the sound of the shower.

"Never."

"Maybe you should."

"Maybe." I switched the shower off, and grabbed my shorts.

"Why don't you come with us tomorrow?" he suggested. "Sondra and me. I'm going after a—what do you call the big herbivores with the crests?"

"Lambeosaurines."

"What's the one with the really long crest, like a snorkel?"

"*Parasaurolophus*."

"Yeah, that. The satellites show a whole herd less than a hundred klicks away. Why don't you come with us?"

"I'll think about it," I said.

We spent most of that day seeing the floodplains through nocs and the windows of a hoverover, while I watched the satellite pictures on the com and steered us away from the herds of triceratops and torosaurus and any large

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predators. After a less than enchanting day, we returned to the swamp cypresses just before nightfall. Sondra wanted to get out and walk into the forest, and when I expressed reluctance, Kevin opened the door on his side and jumped out without even donning his respirator. I cursed myself silently for not having locked his door, wondered what the hell he was trying to prove, and decided that I couldn't let him go there unarmed and alone. "Okay," I sighed, grabbing the laser. "Put your masks on, and let's go."

Kevin had a good head start and he kept increasing it, though he was careful to look back occasionally to make sure Sondra was watching, or safe; maybe both. A troodon stuck its head out from behind a tree, and Kevin yelled and charged toward it. Naturally enough, it disappeared. I resigned myself to an hour of searching fruitlessly for elusive, cunning, small dinosaurs in their own, well-shadowed territory, and reached into my pocket for my shades, setting them to infra-red.

A moment later, a male troodon, a length of bamboo in its hands, appeared just a few meters in front of Kevin. He turned toward it, and stopped. We were too far behind him to hear what he was saying, but it wasn't hard to guess; Amy was muttering something in what I guessed was Zulu, and Sondra was squealing with joy. Slowly, and cautiously, the three of us advanced toward where Kevin was now standing. We were at the edge of the wood when the troodon looked at Kevin, tilting its head first to the left, then to the right, and then raised the bamboo to its mouth. After all the fuss, it looked as though the bamboo was just food, something to chew on—and then Kevin turned to face us, and I saw something small sticking out of his throat. The bamboo wasn't food, or a spear, but a blowgun: I brought the laser up, thumbed the safety, and yelled to the girls to head back to the car.

Kevin staggered in our direction—the dart must have been poisoned, blowgun darts almost always are. I remembered reading that BaMbuti blowguns can bring down a gorilla or elephant, and tried to forget it. Another male troodon appeared, also with a length of bamboo; I fired, and hit the blowgun, which exploded into flames, as well as the troodon holding it and the tree behind him. The damn fool had set the laser to maximum power, enough to kill a tyrannosaur, leaving enough charge for maybe five or six man-killing shots.

The fire, and the crack of the laser, scared the troodons away for a few seconds, and then a dozen appeared, brandishing weapons better than any nature had given them—triceratops horns and dryptosaurus claws. Kevin ran, but they were much faster, and they soon surrounded him, herding him away from us. I heard Sondra screaming out to Kevin, telling him to stop, stand his ground. He continued to run—and then disappeared. I stood my ground and kept firing until Amy stopped the rover a few meters behind me, and then I ran too.

With the rover at maximum lift, I drove near the spot where the troodons were gathered, warning Sondra not to look down. Kevin was lying motionless in a shallow pit, impaled on topsy horns and stakes of sharpened bamboo. The troodons looked up as our shadow passed over them, then, obviously deciding that he was already dead, began hacking at him with the horns and claws. I made a note of the location, then drove away.

"Those weapons," said Sondra, at breakfast the next morning. "The blowguns . . . the troodons are hunting *us*, aren't they?" I raised my eyebrows, but said nothing. I could feel Amy watching me as she ate her omelet. "Those darts wouldn't go through dinosaur hide."

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"They might, at close range. They'd only need to sting a little, like a horsefly, to get the dinosaur running, steer him toward—in the right direction." The stakes would work anyway, like judo—you just use your opponent's size and weight against him—but I didn't want to say that. She hadn't seen Kevin die, or what little they'd brought back in a body bag.

"How big was the pit?"

"Three or four meters; big enough for a juvenile hadro or topsy, and deep enough that even an adult might have difficulty getting out."

"I don't know," she said, staring into her coffee. "I still think they're hunting us. After all, we're the weakest prey around, aren't we, once you separate us from the herd?"

I looked at Bruno, and then at Amy, who suddenly seemed fascinated by a butterfly on the ceiling. "It's much more likely they've been using the darts on birds or pterosaurs," I said. "Or maybe on each other. But at most, they're taking one or two humans a year—hardly a staple of their diet, more a . . ."

"Target of opportunity?" Amy suggested. I glared at her, then shrugged.

Sondra sat there silently for at least a minute, then drank the rest of her tepid coffee. "Well, we have evidence, now," she said.

Kevin's family threatened to sue, but Sondra and Amy supported my version of events; Amy even had a few hastily-taken snapshots as proof. I kept copies after the court cleared me of all blame; they're the only souvenirs I own. They're a little too gruesome for public display, but Amy likes to take them out and reminisce every time she visits. "Poor Kevin," she sighed. "If only one of us had recognized those weapons for what they were, we might have been able to save him."

"How could we?" I asked. "The pit was well concealed, so there was no way we could have seen it from ground level. And the blowgun just looked like a length of bamboo; I'd never even seen anyone use a blowgun before. Had you?"

Amy sipped at her tea. "No, but Sondra must have. I know that *Homo ergaster* had them."

"Sondra?" I stared at her. "You can't be serious. Okay, *we* both disliked him, but not enough to set him up to be killed. Right?" She hesitated, then nodded. "But *Sondra?*"

She shrugged. "I suspect she stands to inherit a lot of money. But I could be wrong."

Amy moved to Maia City a few months later, renting a room around the corner from the hostel, though she stays here most nights. Sondra hasn't been back, and sometimes I miss her, but that probably wouldn't have worked out anyway. I suspect she's a little too civilized for the Cretaceous.

But I could be wrong. O

We appreciate comments about the magazine, and would like to hear from more of our readers. Editorial correspondence should include the writer's name and mailing address, even if you use e-mail. Letters can be e-mailed to 71154.662@compuserve.com or posted to Letters to the Editor, *Asimov's*, 1270 Avenue of the Americas, New York, N.Y. 10020. Letters may be shortened and edited for publication. The e-mail address is for editorial correspondence *only*—questions about subscriptions should be directed to Box 54625, Boulder, CO 80322-4625.

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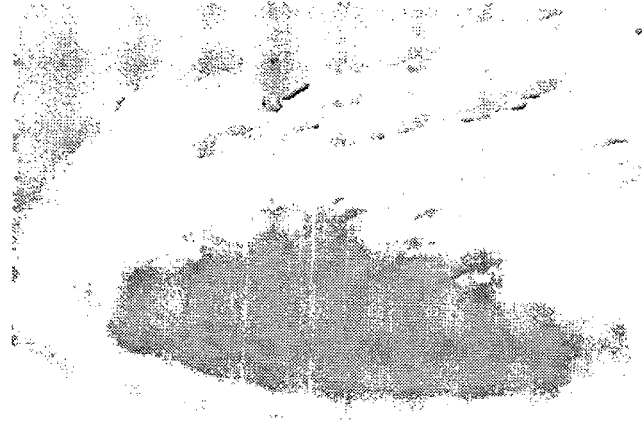

PERSONAL COSMOLOGY

out there in space
folds of cosmic fabric
roll together stars,
like marbles moving
spiral-wise around
a funnel.

me by you,
as focal points
we spin together
starlike
sometimes near
& sometimes far apart

but always hasten
inward making
helix twist and open
inside helix,
like the lightning
streaking cloud-lit skies

—Dana Wilde

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Sarah Clemens

Sarah Clemens is a legal medical illustrator. Her first story for *Asimov's* is inspired by "memories of growing up in that strange place called the South, where there's an eccentric relative in every family and the Civil War is still referred to as 'The War of Northern Aggression.'" The author's previous sales include stories to *Ripper!*, *Little Deaths*, and *Twists of the Tail*.

Red came to a dead stop at the edge of the garden. "I don't know who you think you are," she said, her voice firm. "But those are Miss Lydia's strawberries."

"I'm Virginia," said the colored girl, getting up and brushing off her dress. "Matilda is my mama, and Miss Lydia said I could pick 'em anytime I wanted."

They stood facing each other in the pounding August heat, and Red's temper wilted as she wiped her freckled face with her sleeve and pulled off her hat to use as a fan. "Well, I guess that's okay." She shoved the straw hat back onto her head and sat between rows, picking a particularly juicy berry and plopping it into her mouth. The strawberry patch at the back of the property was shut out from the rest of the world, hemmed in by stately hedges.

"Are you Yvette?" asked Virginia. She was a gravely pretty girl with dark brown skin and braids all over her head, clipped with colorful barrettes.

Red grimaced theatrically. "I hate that name. Call me Red."

"It fits. You here for long?"

"Through the end of this month and into the first week of September," said Red, getting up and joining Virginia on her row.

"You'll be here for Miss Portia's next spell," said Virginia matter-of-factly. "Her last one was something! The lions over at the zoo roared all night and the wolves howled."

"They *did*?"

"Yeah, and Miss Lydia and my mama were with her all night."

Red picked a berry and cautiously handed it to Virginia. "How old are you?"

For the second time they sized each other up.

"Twelve."

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"Ten," said Red. They ate strawberries for a while, a few making it into a bucket Red had brought with her. "I've never talked to anyone colored my own age," she said finally.

Virginia grinned. "Me either. No white girl, I mean. But my teacher says this is 1963 and things are going to change."

"You mean like going to school together and stuff?"

"Yeah. Last year a black man tried to get into a college in Mississippi. Someday—" she broke off and lifted a finger. "Listen. You hear that?"

It was a deep *Aaaaauh . . . Aaaaauh*, filling the heavy air between them and the Memphis zoo. The lions roaring, bringing the outside world into Lydia's isolated garden.

"Feeding time," whispered Virginia.

"Yvette! Yvette? Where are you!"

Red squinched up her face. "It's my grandmother. I'll talk to you later. G'bye."

She ran to the house with her few strawberries and Lydia, her grandmother, closed the screen door behind her.

"How can you run in this heat, child? Put your bucket down and let's sit in the dining room."

That meant it was serious.

"Do you know why you're here?" asked Lydia, her hands reflected in the rich depths of the mahogany table. Red could see heavyset Matilda pass by the door, listening. Matilda, Virginia's mother, who smelled of Clorox and sweat, whose dark, round face was framed with wisps of gray hair that flew loose from her tight bun. She seemed aloof to Red, as if she owned the house, rather than cleaned it. Lydia didn't seem to know she was there.

Red put both elbows on the table. "Uh—because my parents are moving us to New York and this summer'll be my last chance to learn any manners, because God knows they don't have any up there."

Lydia cocked an eyebrow. "If I didn't know better," she said in her refined drawl, "I'd say you were repeating something you heard."

Red shrugged.

"Well," said Lydia, "we've never been all that close, you and I, and that's why I told your mother I'd keep you here in Memphis while they move. I *am* your—grandmother. And you haven't seen much of your Great-grandmother Portia. She'll be down with one of her spells while you're here, at the end of your visit, but that shouldn't be a problem. As to manners . . . I'll start by calling you by your Christian name, Yvette. Red sounds like a cowboy."

"I hate Yvette."

Lydia just looked at her from beautiful, drooping eyes, her fine lips curving up on one side. "Well, you'll just have to get used to hearing it, because I won't call you Red. I was educated at a good school where they taught you manners."

Red's face brightened. "Daddy says that back before the Punic Wars you went to Randolph-Macon."

Lydia's eyes narrowed. "How kind of him to fill you in."

Through the screened windows, covered with drifts of white curtain, Red could hear the lions.

"Do they roar very often?" she asked.

Lydia frowned. "They're lions. They roar when they roar." She looked elegant in the gardening workshirt and khaki pants in a way Red feared she never would.

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"Great-grandmother Portia wants to see you tomorrow, Yvette. She's very happy you've come."

Red smiled, but it came out more a wince.

She slept on a narrow twin bed that night, listening to the fan huff hot air, and to the leaves outside her window, caressing each other in the faint breeze. A tear fell, hot against her skin and the starched pillowcase. This room was so different from her own, and she missed having her mother tuck her in and her father read to her. They had just gotten into Howard Carter's *The Tomb of Tutankhamon* and she longed for the sound of his voice, the way he turned the book around so they could share the pictures.

Then, the night held its breath, and so faintly, so faintly, she heard a new sound—the wolves howling at the zoo.

"Did you wash your face and comb your hair?"

"Uh-huh." Red never washed her face if no one was watching, and her shock of red hair didn't take much maintenance.

"Say yes, not uh-huh," smiled Lydia.

They breakfasted and went out back, into the dappled light of dogwood trees and beyond to the irises, nodding in ruffled and multi-hued splendor.

"When your mother was little," said Lydia, "she would always pick out a blue iris. I started breeding them to get the bluest ones I could for her." She cut one and, carefully, Red took it from her.

"Now, we'll go see Great-grandmother Portia." She led her into a tunnel of trees and hedges to the house next door. Lydia didn't have a lot of money, compared to what the Tucker family had had when she was young. When she had married Grandfather Earl, they had purchased two shotgun houses, side by side on Crump Circle, the other one for Great-grandmother Portia. Grandfather Earl died years before Red was born. What was left of the Tucker estate brought in just enough to go without working, which suited Lydia fine, because her life was devoted to horticulture. She combined both backyards to create a seamless melding of formal garden and English herb garden, to plots of irises and vegetables, to the cool tunnel of trees that led from Lydia's house to the back door of Portia's house, because no one ever went in the front door. Red had been here several times, but she couldn't help gaping at the denseness of the foliage in the tunnel. It was as if she had entered Sherwood Forest itself, thick and primeval. They emerged at the back of the house and Great-grandmother Portia stood behind the screen door, a still gray shape. Red would have given anything to bolt from these old people and their remote, decorous lives.

"Why, you've brought me an iris." Portia swung the squinching door open and ushered them in. Portia Tucker was dressed like a picture out of a book, in a blue skirt that went all the way to the ground and a white, high-necked blouse with full sleeves. Her face was gaunt and very wrinkled and her thin hair lay piled in a braid on her head, the pink from her scalp showing through.

The leafy tunnel had brought Red to more than another house; it seemed another world, for there was no washing machine or dryer on the back porch, no modern appliances in the kitchen, not even a refrigerator. Red noticed kerosene lamps here and there, storm covers lightly blackened with use.

"Could I trouble you to put the iris in a vase?" The request was directed at Lydia, who knew right where the vase was; and as she drew the water and dropped the flower in, Red realized her grandmother had command over this

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house. It was spelled out in small gestures, the way Lydia shook out a towel and wiped the vase, how she went forward into the dining room and set it down where she chose.

"Let's us sit in the dining room," said Portia. Lydia was already pulling out chairs. "The front parlor is far too dark and hot."

The magnificent table, china cabinet and sideboard in the dining room were oversized and forlorn, refugees from an antebellum mansion. Every step made the floorboards creak and the ancient china rattle. The living room at the front of the house was dark and thickly curtained and its dark mahogany furniture, too, seemed to loom uncomfortably in the cramped space.

"I believe this is the bluest iris I have ever seen," said Portia. It was a soft voice, honeyed with a southern accent. She looked at Red with eyes far younger than her face, with fine wrinkles that turned up into smile lines.

Red felt the dread lift a little as she sat next to the old woman in the still, cramped room where doilies covered every surface.

"I am pretty old," confessed Portia. Her accent was different than Lydia's, more courtly; and her eyes were the palest blue Red had ever seen, as if time had bleached them out.

"I'm pretty young," grinned Red.

Lydia adjusted a fold in the curtains. "You two have a little talk, while I go out back and pull some weeds. I won't be long." Her eyes met Portia's for only a moment, in what looked like a warning frown.

Portia was silent until she heard the back screen door slam. "You're no sissy, are you?"

"I—guess not."

"I mean, you're not one of those little girls who wears flouncy dresses and has sausage curls and sits under a tree on a blanket and plays with dolls."

"Oh, definitely not." Lydia had made Red wear a dress for this occasion, but both skinned knees poked out from under the hem.

"Lydia has her good qualities," said Portia. "But she isn't big on adventure. When I was younger, I had a lot of adventures. Have you ever been to Vicksburg?"

"No . . . ma'am."

"Like Memphis, it looks down on the Mississippi River. They dug trenches and tunnels during the siege. And I used to prowl through them, and oh, would the soldiers be surprised when I would come upon them!"

Red had no idea what Portia was talking about. "All I do is watch Tarzan movies," she said wistfully.

Portia gave her a strange look. "Well, you shall find adventure someday. I am sure of it."

The bang of the screen door announced Lydia's return. "How are you two getting along?" she asked at the dining room door.

"Just famously," said Portia. "In fact I would like to give Yvette a little something."

Lydia froze.

"Oh, honey, just a little box! Something my mother gave to me when I was a little girl. It's in the chifforobe in my bedroom, in that drawer where I keep all my trinkets."

Lydia went around the corner and Red heard the sound of drawers opening. She came back holding up a wooden box. "This one?"

"No dear, the one with the boullework."

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Lydia came back and handed the small box to Portia, who turned it over in her bony, blue-veined hands. She gave it to Red. It was ebony wood, inlaid with brass and red tortoiseshell. Opening it, she found a little key on a tassel, which fit into the keyhole.

"This is really neat," said Red. "Thank you, thank you very much."

"My mother gave it to me when we still lived up the river from Vicksburg at Fairgrove. I shall tell you about her sometime."

"But right now," Lydia cut in, "Great-grandmother Portia needs her rest. Maybe you two can visit again in a few days."

Portia leaned over and whispered to Red, "This box holds secrets."

"Pretty fancy," said Virginia.

They sat on a bench across from the herb garden, taking advantage of the shade as the cicadas tirelessly whirred their song of summer heat.

The black girl opened the box and looked inside.

"She said something kinda funny," said Red. "That it holds secrets."

"Old people say things like that. Maybe she was talkin' about memories."

"I dunno. It was funny the way she said it. Oh! And you know what else? She whispered it to me, like she didn't want Lydia to hear."

They stared at the box.

"Maybe . . ." said Virginia, suddenly excited, "maybe it's like something I saw on Miss Lydia's TV, on *77 Sunset Strip*. You know, a secret compartment."

Red took the box back and turned it over carefully. "Well, the bottom's awfully heavy."

Together they picked and poked at the box. It was Virginia who accidentally pressed the inlay on one side, causing the bottom to come loose at one edge. With careful prying, the bottom swung out, revealing a shallow compartment filled with a mashed scrap of cloth. Red pulled it out and a key fell to her lap. A modern brass key.

"Do you recognize it?" asked Red.

Virginia shook her head. "Mama has lots of keys for the houses, and I can't tell."

"Your mother knows a lot about things around here, doesn't she?"

"Yeah. She's been working here since before I was born. Miss Lydia's been good to our family. She helped us a lot when my papa died."

"Your father died?"

Virginia's face was very still. "He had cancer and he died when I was eight."

It was an overwhelming concept for Red, who felt enough pain just being separated from her father for a few weeks.

"Wow, that's bad," she said lamely.

"Yvette!"

They both jumped, then fumbled frantically with the key and the cloth and the box. The bottom snapped shut just as Lydia came around the corner.

"So! What are you two up to?"

Red burst out laughing and Virginia covered her mouth as she giggled.

"Nothing," said Red. "Just looking at the box."

"There's lemonade in the house. Virginia, could you pick us some strawberries, and we'll have them with cream?"

"Yes, ma'am."

"Yvette," said Lydia as they went into the house, "There's a girl your age

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whose mother is a member of the Garden Society. She'd love you to come over."

"No, that's okay. Virginia and I have stuff to do."

"Getting too friendly with Virginia might not be a good idea."

"Why not?"

Lydia said starkly, "Virginia is like a member of this family, but she's colored, and that means we mix only so far. Do you understand?"

"I guess," said Red.

The next day, Red waited impatiently until Virginia came to Miss Lydia's house. "My mama's taking a nap over at Miss Portia's."

"Great. Let's get started." Red pulled the key from her pocket. It didn't fit the padlock on Lydia's basement. It didn't fit the back door or the front door.

"How long does my grandmother take when she goes to a garden club meeting?"

"Usually a couple of hours, sometimes more."

She and Red stood in the living room, and Red peered about, as if she could see through the walls. "There aren't any more locks here, are there?"

"No. I *told* you we should check Miss Portia's house. That makes more sense."

"But we had to be sure," said Red, leaving unspoken that they really didn't want to go next door. They traced their way back through the trees, edging past the creaking screen door and into the bleak kitchen.

"I'll check on Mama." Virginia was gone only a moment. "As far as I can remember," she whispered, "there's the front door, the back door—" she ticked them off on her fingers. "The basement, and Miss Portia's room."

"Miss Portia's room?"

Virginia shrugged.

Red took a resolute breath. "Is your mother a heavy sleeper?"

"Yeah . . ."

They tiptoed past the dining room, wincing at each creaking board. Matilda sat back, breathing heavily, her work-worn hands draped over the arms of the rocker, a half-finished doily in her lap. Portia looked like a corpse, engulfed in featherbeds and lying on a canopy bed that nearly swallowed the small room. Red crept toward the open door, ready to bolt. She slid the key from her pocket, and placed it against the lock. It bumped in halfway, then it resisted. Red pressed the key harder, to make sure. Nope. This wasn't the lock.

She shook her head for Virginia's benefit, then tugged. The key wouldn't budge.

Fear lanced through her and she yanked hard, pulling the key free and bumping the glass doorknob. Red and Virginia froze, staring at the sleeping women. Matilda's snoring never broke rhythm. But for one second, Red thought she saw Portia's eyes, open and clear, then shutting quickly as they retreated, quaking in their sneakers.

"Something tells me this key won't fit the front door or the back door," whispered Red.

"*You* just don't wanna *be* here."

Red giggled, and so did Virginia, cupping a hand over her mouth.

"Well," said Virginia, "we could try the basement. It's outside."

It wasn't such an adventure now, and Red stood for a moment before nodding. "Yeah. We've come this far, right?"

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They nodded together and went to the back of Miss Portia's house. There were steps leading down to the door, and it struck Red as odd, that the steps were swept clean and well used. Lydia's basement steps were grimy. Just out of curiosity, Red turned the knob on the door, and to her surprise, it opened.

"Try the key anyway," said Virginia.

Red pushed the key against the lock and shook her head.

They crept down the stairs, smelling the mustiness of an underground room—but it wasn't a room, it was a short passage with a door off one side. It was dark, so dark all Red could tell when she put her hand against the door was that it was smooth metal, cool to the touch. A *snap*, a light came on, and her heart nearly leapt out of her chest. It was only Virginia, her hand on the light switch.

"Look at this!" said Red. There was a rocking chair next to the door, and a small table which held a ring of keys and a quietly ticking clock. On the floor next to the chair was a small basket, filled with yarn and knitting needles.

"That's my mama's knitting," said Virginia very quietly. "I have a lot of sweaters."

The metal door was dull gray with a peephole, several heavy bolts, a handle—and a lock. Red put her weight against one of the bolts and it shot back easily. Oil glistened on the workings. It was the same with the other one . . . and then she tried her key, which went in easily, turning with buttery smoothness. The door swung in, and she groped for a light. Nothing.

"It's here," said Virginia from the hall. She snapped it on, and they beheld the tiny, stark, concrete room. Against the far wall was a very strange bed with a series of hinged clamps contoured to the shape of a body, each with its own lock. There was a light set into the ceiling, covered with bars.

The walls. Crisscrossed with parallel grooves . . . Red crept into the room and ran her hand over the jagged furrows. "Claw marks," she whispered. She looked back at the door, struck by how thick the wall was at the lintel. A foot deep. And as she drew in breath she felt a pulse of unreasoning fear.

"Let's get outta here," she said.

Virginia stood with her hand poised on the light switch as Red backed out and locked up. She nodded and Virginia turned off that light, and the one for the hall. With their last reserve of stealth, they pushed the basement door shut and dashed for the sunlight.

"White folks can be cruel," said Matilda several days later, in the afternoon.

Red, Virginia, and Matilda sat on Lydia's back porch, stringing pole beans. The tired black fan heaved itself back and forth, its faint breeze hushing by their clammy faces. Matilda had put them to work on the bushel basket that never seemed to get any emptier.

"Miss Lydia isn't the only lady I work for," Matilda elaborated. "The other ladies, they're supposed to serve me lunch, and all they ever have on my day is hot dogs. You *know* those folks only eat hot dogs when I come, so they don't have to serve me anything decent."

Matilda glared and sweated, and Red wondered if it was somehow her fault. It took her a moment to think of something to say. "My grandmother—Lydia—she aways has good food."

"Yes, child, Miss Lydia's a good woman. You think she grows so many pole beans just to feed herself and Miss Portia?"

Red stared down at the beans.

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"All summer I put up what she grows out there, and she only takes a few of the jars for herself. The rest is for my folks—hold on there, you missed that end."

Red looked down and snapped the end, peeling the string down the length of the bean.

"Miss Portia, now . . ." Red watched her tired, blunt features as she struggled with the right words. "She's a woman who's mighty tired of life. Mightly tired. I wish Miss Lydia would do right by her."

"Yvette?" Lydia appeared around the corner. "Great-grandmother Portia would like some company while I trim the hedges."

Red got up a little guiltily, leaving Matilda and Virginia with the pole beans.

She sat across the table in the stifling dining room and couldn't think of a thing to say. Gramma Portia clinked the little spoon against her flowered china cup and sipped her tea. Red looked down at hers and wondered if she dared touch it. Cautiously, she held the handle and took a sip. No match for Coca-Cola. Suddenly Portia looked straight at Red and said, "I think Lydia's out of earshot. Can you check?"

Red blinked, then crept to the kitchen door and listened. She could hear the snick-snick of Lydia's hedge clippers.

"All clear," said Red breathlessly, coming back to her seat.

"Well then," said Portia. "How did you like that little box I gave you?"

Red knew what she meant. "We found the key."

"We?"

"Me and Virginia."

"Virginia and *I*. Go on, then."

"We tried all the doors we could, until we finally thought about the cellar. And we went down there." *And saw the stark walls and clawmarks.*

"They keep me in there when I have one of my spells. No, don't stare at me so, it's not cruel. Just necessary. And I've been in smaller places . . . much smaller."

"Like what?"

"Did they teach in school about the time General Grant came down to Vicksburg and laid siege to our city?"

"Um . . . only a little," said Red, to keep Portia going.

"That Yankee Grant was a daring man, I'll give him that. Crossed the Mississippi and surrounded us. But he couldn't storm our barricades! So he fired his big guns at us, shells were falling every day, but no one talked of surrender." Portia's voice had grown softer, her face less wizened. "There I was, an old maid of twenty, living with Papa and the servants who had stayed, in our house in Vicksburg. A shell hit the roof; nothing as terrible as some of our neighbors, but it stirred Papa to action. 'We shall dig into the bluffs like everyone else,' he said. 'It would probably be better for my little Portia, anyway.' He thought me frail.

"So we had a cave dug for us, and there we were, with furniture from the house and a nice rug on the dirt floor. And I confess, I loved it. It was a great adventure, and I could smell the earth all around us and hear the shells as if they were very, very far away. . . ."

Portia's eyes seemed darker, like storm clouds. "But I was never frail, as Papa thought. It was my colored maid Sophie who knew about me, how I got bit by the big wild dog back at Fairgrove, and how, when the moon is full, I have my spells. And while Papa sleeps, I run out in the streets, hungry,

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starving, like everyone else in the city, only I can smell what I need, and I find the siege tunnels and trenches where our Confederate soldiers wait for me. So dark in the tunnels, black but for the red-flower scent of their blood, and I find one sleeping by himself, my nails are sharp, they shred him like a soft roll, and my teeth mangle his throat like ivory knives—and the thick nectar bubbles up in my jaws and he tastes *so sweet* . . . and then I give him to the river. . . .

"Sometimes they cry out. But there's so much pain here, men hurt and dying. One scream in the night?"

There was a smell of musk in the thick air. Portia's face was radiant and her eyes drunk with color, shot through with spears of red. "And that is what I am. Do you understand?"

Red couldn't speak.

Portia looked toward the door. "Why, Sophie, come on in here. Meet Yvette."

It was Matilda at the door, and she took Red by the hand as if she were four years old and led her to the garden, out of Lydia's sight, where they could sit in the shade and look out over the beautiful irises, so still in the heat.

"Did she tell you?" said Matilda. "She shouldn't of done that."

Red's throat ached as tears rose. She was so sweaty she felt as if her skin would melt. She felt horrible, betrayed and utterly alone, and had never wanted her mother and father so much in her life.

"You ever seen one o' them monster movies? They call 'em werewolves. And all the people who saw the movie I went to, they screamed at the scary parts. But they weren't scary to me, because Miss Portia . . ." Matilda pulled out a clean handkerchief from the pocket of her apron. Red buried her face behind it.

"Lord knows what happened to her is bad. But she can't help herself. What she's got is some disease that I don't think us or God understands. And it keeps her alive, when all she wants is peace."

"She gave me the key to the room in the cellar," whispered Red.

"That's where we keep her when she has her spells. She came up from Vicksburg right after the war on that riverboat *Sultana*, and it blew up, and she and her maid Sophie got fished out of the Mississippi. When they made it back to Memphis, Sophie told Miss Portia's people here. And they've kept her hidden in little rooms for years and years. She hasn't been able to get out and do harm. And she's so old now . . . no one from the outside knows she's still alive. *Your own mother doesn't know what Miss Portia is.* When she was a little girl, Miss Lydia sent your mother away to school. Which I can't do with my Virginia," said Matilda in that voice she had used when she talked about the cruelty of whites to their maids. "You're the last Tucker female. You have a right to know."

It was too much of a burden, sitting across from Lydia at breakfast the next morning and pretending to be a carefree little girl. Mercifully, her grandmother didn't notice the haunted look on Red's face, or that she picked at her food because there was a heavy stone at her center. One glance and her mother would have known.

So Red told Virginia.

"Does she really turn into a *wolf*?"

"Yes! Even Matil—even your mother says so."

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"Mama's been with this family since before I was born. And my great-great-grandmother was named Sophie. Mama works at other people's houses, but not like here. She practically lives here. She must have known about this for a long, long time."

"And maybe your grandmother before her."

"I'll bet! You know, Mama doesn't laugh a lot. Sometimes she says I better laugh while I can."

"Maybe," said Red, "she just means that your life will be hard . . . your being a negro."

Virginia gravely shook her head. "It's more than that. My Aunt Mary works for some awful mean people. But she still laughs and makes jokes and says you can't let life get you down—and that my generation will have it better. Mama . . . well, if she's known about this all her life, it would explain a lot."

"Our two families go back a long way."

"We're practically sisters," grinned Virginia.

Red grinned back and realized the weight had lightened as she talked to Virginia. Yesterday, between one heat-thickened moment and the next, Red had met a monster, and life was full of dark corners. But now she could bear it, if Portia wanted to see her again.

"I'm not going to be your maid," said Virginia. "When I grow up."

"Well, of *course* you aren't. What are you going to do?"

"Dunno yet. I'll go to college."

They sat in contemplative silence. College was further off than anything they could think of, and for a moment it awed them more than the werewolf next door.

Red drifted thoughtfully into Lydia's kitchen and heard her on the phone, heard a name to make her heart pound. She was talking to Daddy.

". . . well, Frank, it was nothing really. I just put in a good word. . . ."

Red paused in the breakfast nook, some instinct making her hold back and listen.

"I think you got the job because you're a good teacher, not because the dean of the department is a schoolmate from Randolph-Macon. From back before the Punic Wars."

Red waited out the silent space of her father's response.

". . . maybe it *is* time we were on more cordial footing. Frank—Frank, it comes down to this; I knew you wanted the job, I thought it would be good for the three of you to move—up there . . . never mind why . . . and Miss Delacourte would never have hired you if she didn't think you were the best man for the job. I just wanted the best for the three of you. Oh, let me go get Yvette, and not another word about it. Yvette!"

Red tiptoed back to the kitchen, banged the door and ran into the dining room.

She was part of the enclave now, at home with the stately hedges, embraced by the emerald tunnel. She had prowled the terrible room, shared secrets with a friend. Crying on the pillow that first night seemed a remote dream as Red sat across from Portia the next day.

"Dear child," said Portia, "have you pulled yourself together yet?"

"I guess."

"I could tell you were a girl with sand."

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"Sand?"

"Grit, determination, strength." Portia looked at her with those pale blue eyes and the suggestion of a smile shadowed her mouth.

Portia was beautiful when she was young, realized Red.

"I am a one hundred and twenty-year-old werewolf. But I don't change into a wolf like I used to, because when the full moon comes around, Lydia takes me down to that little room with no windows, and I can't see the moon. I just get wild and sick, and I am told my nails and teeth get sharper.

"And here's the thing: if Lydia gets too old, whose turn do you think it will be to take care of me? Your mother or *you,* and that colored girl."

Red shook her head emphatically. "Grandma Lydia got my father a job up north so my mother wouldn't have to take care of you. And Virginia and me can't do it. We're going to college."

"Virginia and *I* . . . now that's interesting, Lydia sending you up north." She seemed far away and Red fiddled anxiously with her teacup.

Portia slapped the table with the flat of her hand. Red jumped and knocked over her tea, but the old woman didn't notice. "I see it now. She's going to kill me."

"What!"

"Oh, not anytime soon. She wants me to hang on for a long time, because that's her revenge. But when she gets so old that caring for me is a real burden, she'll take me outside on a full moon. I think changing into a wolf would kill me at my age."

Red struggled to comprehend. "Revenge for what?"

Portia wasn't listening. "We will beat her to the punch. I'm going to kill myself on the next full moon, two days off."

Red stared at Portia. "Great-grandmother Portia, I've heard it's wrong—"

"—to kill yourself?" Portia turned her hands over and Red looked at her leathery palms and sharp little nails. "Let the truth be told. I'm not your great-grandmother. Oh, I'm a Tucker, but your line descends from my sister, who moved to Memphis before the war. When you have a monster inside, like I do, you don't love men or bear their children, and people die when they get too near. They say your grandfather Earl fell accidentally, or that the boiler of the *Sultana* blew up accidentally, killing eighteen hundred people, but it's not so. If I hadn't been there, neither thing would have happened."

The hairs on Red's arms were standing up.

"I welcome death," said Portia. "Death is a part of me, like the color of my eyes."

The day of the full moon found Red packing for the next day's flight. She was fitting Portia's small box into a corner of her suitcase when the phone rang. Red heard Lydia pick up and thought nothing of it until she heard her grandmother gasp.

"Matilda! Matilda, come to the phone right away!"

As Red heard the heavier tread in the hall, Lydia came into Red's room, her arms crossed tightly, her eyes blazing. "You might as well hear this, Yvette. Matilda's sister Mary has been hit in the face by a brick. Two white men threw it from their car as she walked home from the bus stop."

From the hall they heard heartbreaking sobs and "Oh, Lord, oh Lord!"

Red felt her stomach lurch. "Is she gonna be okay?"

"They don't know. That was the doctor, calling from the hospital. I'll drive Matilda over there, you stay here with Virginia."

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Red sat on her bed, wondering how she was going to face her friend, but it was Matilda who came to her door.

"I have to go now and I don't know when I'll be back," she said in a choked voice. Red could hardly bear to look at her face, the tears soaking into the weary wrinkles. "Maybe in a couple of hours, maybe not for a while." She pulled a vial of green liquid wrapped in yellowed paper out of her apron pocket and handed it to Red. The paper had words written in a spidery scrawl: *belladonna, henbane, jimson weed, wormwood. Ground and mixed with olive oil, turpentine and hog fat and the fat of an unchristened infant.*

"It'll have to do without that last part. I've been growing those plants by the tracks, waiting for her to give me the word. You go take that bottle to Miss Portia before tonight. You're the last Tucker and maybe this is the way it's supposed to be."

Matilda left. Lydia was starting the car out front, and Red realized Virginia had come into her room.

"I'm sorry," said Red, and she meant it to go beyond the single terrible incident that sent Matilda hurrying to the hospital.

"Mama says it's because all those people went on that march to Washington last week. If they'd just stayed home nobody would be out throwing bricks." Virginia's eyes seemed to burn. "But what those white boys did was wrong. Flat-out wrong."

"Yes." After a mournful silence Red said, "I have to take this bottle to Miss Portia. Your mother told me I have to."

"She told me, too." said Virginia, swiping roughly at her eyes. "I'll go with you."

In the soft, golden afternoon, Red and Virginia emerged on the other side and mounted the steps to the old house, swinging open the screen door. Portia appeared in the kitchen as silently as a ghost.

"What have you got there?" she asked.

Red held up the vial.

"At long last," her mellifluous voice sounded distant.

"Miss Portia," said Virginia, "it might be hard on Red if she hands that to you by herself." Virginia clasped her hand over Red's and together they placed the vial in Portia's hands.

"What will this do?" whispered Red.

"It will change me into a wolf and I won't be able to change back. It won't be painful, but it will be more exertion than the monster can bear, and she won't last long. Do you want to watch me drink ?"

The two girls looked at each other. *We've come this far.*

Portia uncorked the little vial, held it to her lips, then paused. She smiled and held it out, saluting them. Then she tilted it to her mouth, grimacing at the taste.

"Goodbye," she said. "Thank you, with every fiber of my being. Remember me like this when you see *it* tonight."

They sat together by the telephone, as silent in Lydia's house as Portia was next door. The sound of the bell cracked the air, and Red picked it up before the first ring had finished.

"Yvette, we can all breathe easy. Mary got some bad cuts and had to have some stitches, but the doctor doesn't think there's a concussion. They're going to keep her overnight just to be sure. So you tell Virginia. Matilda and I

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will be home soon. We'll all eat some supper, then you two can stay at my house while we look after Great-grandmother Portia. It's one of those nights when she'll have a spell."

From the abundant foliage the two girls watched Lydia and Matilda go into Portia's house. Matilda came for them when it was dark and the moon had risen, and led them to the cellar. Portia lay on the perverse bed, clamped in a prone position. She writhed against the restraints, her tidy braid unraveled, the strings of white hair lashing across her face.

"My *God,* Matilda, what are those girls doing here?" Lydia almost dropped the plastic cup in her hands. She was completely undone, bereft of elegance and composure.

"They've come to see Miss Portia turn into a wolf."

Lydia leaned stiffly against the wall. "You told them," she said, and Red was amazed at the pain in her face.

"They—have—the—right!" gasped Portia.

Everyone turned and looked at her, and Lydia cried out. Portia's face was growing coarse fur, as were her hands and feet; all that could be seen peeking out from an old nightgown.

"I took a draught," she whispered, and then she was lost to them, shuddering and shaking.

Lydia looked straight at Matilda, who stared back unflinchingly, as if she had borrowed some of the red light from Portia's eyes.

"I see," said Lydia. "It's over, and I had no say in it." She squeezed her eyes shut and turned away from them as she wept.

They watched over Portia, silently, as she twisted and strained against the clamps, the room filling with the musk of a wolf.

"It's time to leave," said Lydia faintly.

They all backed out of the room and bolted it behind them.

Lydia wouldn't let Red look through the peephole. They could hear Portia gasping; scrabbling against the restraints of the bed. The silence that followed was hollow, unearthly. Then came a low growl, guttural and coarse as gravel—and an explosive, feral scream, coupled with the sound of wood splintering and metal whanging against concrete. Red found herself pressed against the far wall of the corridor, gripping Lydia like a lifeline. Lydia folded her arms around her, softly. The monster howled over and over, hoarse, lusting wails, and her claws screeched against the walls, sending shivers to the pit of Red's stomach. They waited out the rage behind the walls, exhausted by the time the snarls and thuds of the werewolf's body lessened and stopped. Finally, Lydia released Red and peered through the peephole. She was very still for a moment, then she shot back the bolts.

They found her in the middle of the room, her legs splayed to hold her up. Portia was just an old wolf now, covered with white fur that had a worn yellow luster. Her eyes were blue, stark against black lids, and her bony frame seemed fragile as it heaved breath, making Red want to go forward and hold her up. But caution held her back. And Lydia's hand.

"We can take her outside now, Miss Lydia. She's through changing for good," said Matilda.

They bore Portia into the radiant night, collared and cross-tied, and the ancient wolf turned her muzzle to the moon, drinking in its luminosity. Red thought about the trenches in Vicksburg where this werewolf had savaged

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Confederates, her eyes glowing as they glowed now, full of moon-magic and bloodlust. She could hear the wolves at the zoo, howling like demons.

They led her to a grassy spot by the hedges and she stood silhouetted against the moonlight.

"She killed Earl when your mother was very young," said Lydia. "He got careless on the night of a full moon. *That's* why I kept her alive all these years, she killed my *husband*."

They listened to the wolves howl frantically against the counterpoint of deep lion roars.

Portia's breath came out in wheezes.

"She's dying, at last," said Lydia, and Red could hear sorrow in her voice.

Portia drew herself up, her coat bristling with bright needles of light. She threw her head to the moon and gave one last howl, harrowing and rich, then she fell. It took Red a moment to realize that the wolves at the zoo had become silent. Then, they started again, taking up the dirge; farewell to a fearful and mighty one.

Lydia was in the breakfast nook, the gloves she used for heavy digging laid on the counter. She was going at *The Commercial Appeal* with the kitchen scissors. "Article in the paper says people all over Overton Park were calling in to complain about the wolves and lions. Not doubt the *Press Scimitar* will run something this afternoon." She put the short article inside a leather-bound book.

Red slid into the chair opposite her grandmother.

"My whole life revolved around taking care of her, stretching her miserable life out as long as I could," said Lydia, her eyes distant. "I should have let her go years ago. I was so angry when she killed Earl. He was a good man, Yvette, but I don't think he ever really believed, and he got careless. And now, I don't feel angry, just . . . sad. Maybe I'll take a little vacation, visit you all in New York."

Daddy will love every minute of *that,* thought Red.

Lydia leaned forward to get up, then sat down again. "Yvette. Portia left a diary. She kept it faithfully up until the end." Lydia's hand was resting on the little leather-bound book.

A hunger swept through Red.

"When you're older, it's yours," said Lydia. "You've learned a lot already, but you've got some growing to do before most of this will make sense to you. Goodness, it seems like a long time ago that we sat talking at the dining-room table . . . right now, I think you should go say good-bye to Virginia."

How old was ***older****?*

Virginia was waiting at the bench.

"Portia had a diary!"

Virginia's eyes were wide. "A *diary?* Did Miss Lydia give it to you?"

"No . . . she said I had to get *older*."

They sat back, frustrated.

"I'll have to go to college up there," said Virginia finally, "so that when Miss Lydia gives it to you, we can read it together."

"Yes! And we can go to the same school and walk around knowing we have this big secret. And we won't tell *anyone*. Not even our boyfriends."

"Deal?"

"Deal!"

They never said good-bye. ●

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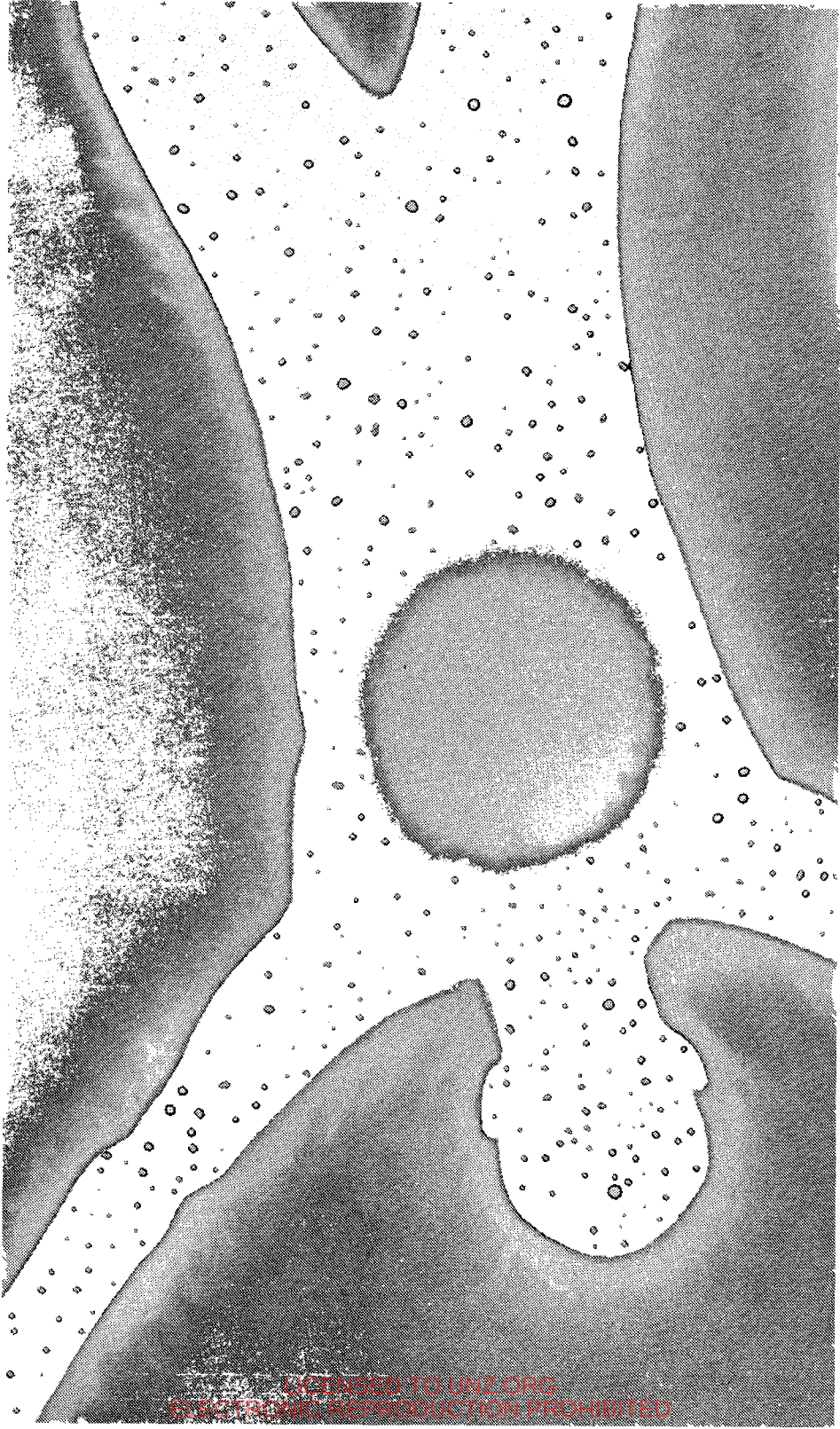
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Ian McDonald

THE DAYS OF SOLOMON GURSKY

Ian McDonald's new tale, which begins with a passionate love story and takes us to the end of the universe and beyond, is set against the same background as his 1995 novel *Terminal Café* (Bantam). The author's latest SF novel, *Kirinya*, is just out from Gollancz (UK). It's a sequel to *Evolution's Shore*, a book that Bantam published in paperback early last year. Mr. McDonald is currently writing *Stupid Season*—his first mainstream novel.

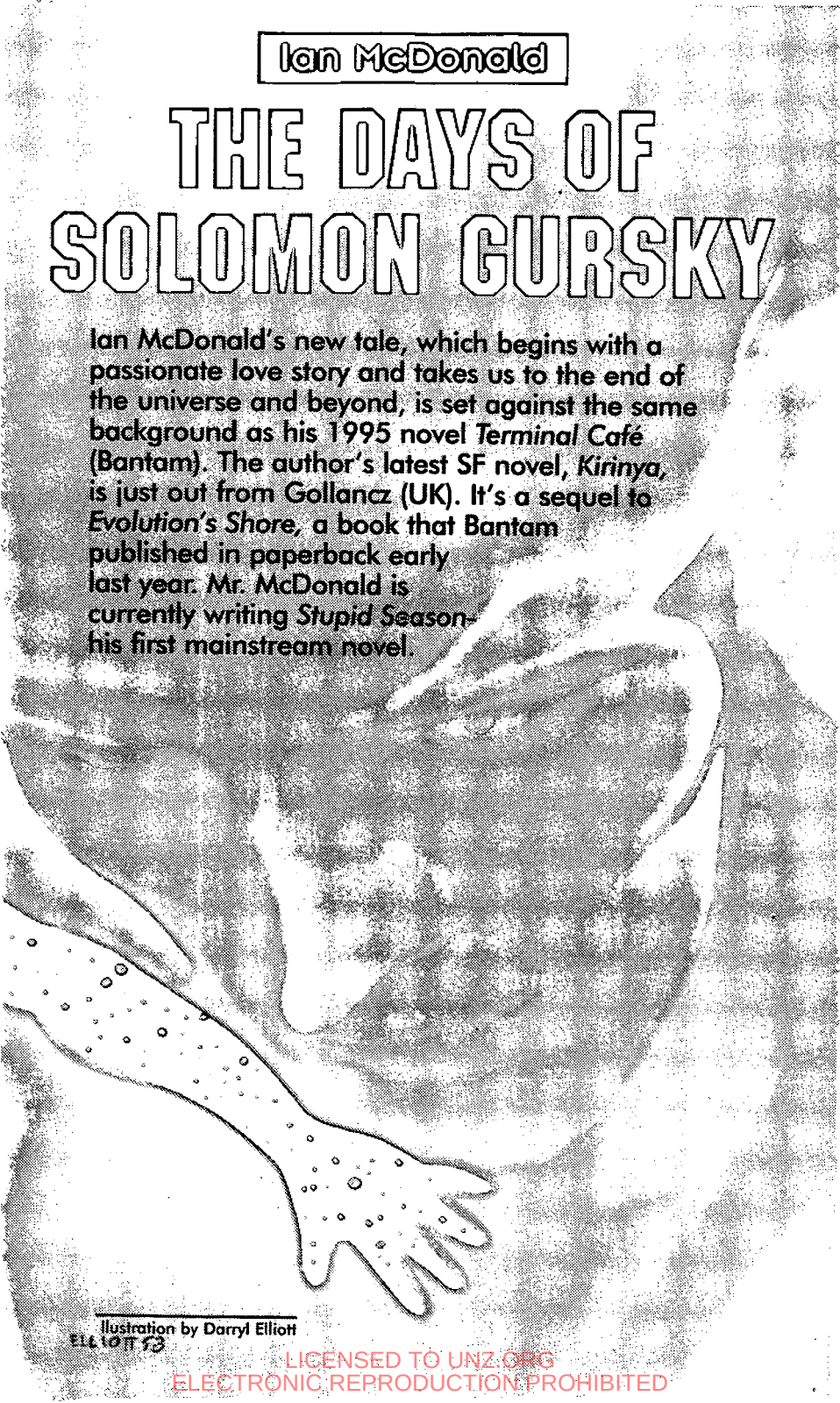

Illustration by Darryl Elliott

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Monday

Sol stripped the gear on the trail over Blood of Christ Mountain. Click-shifted down to sixth for the steep push up to the ridge, and there was no sixth. No fifth, no fourth; nothing, down to zero.

Elena was already up on the divide, laughing at him pushing and sweating up through the pines, muscles twisted and knotted like the trunks of the primeval bristlecones, tubes and tendons straining like bridge cable. Then she saw the gear train sheared through and spinning free.

They'd given the bikes a good hard kicking down in the desert mountains south of Nogales. Two thousand apiece, but the salesperson had sworn on the virginity of all his unmarried sisters that these MTBs would go anywhere, do anything you wanted. Climb straight up El Capitan, if that was what you needed of them. Now they were five days on the trail—three from the nearest Dirt Lobo dealership, so Elena's palmtop told her—and a gear train had broken clean in half. Ten more days, four hundred more miles, fifty more mountains for Solomon Gursky, in high gear.

"Should have been prepared for this, engineer," Elena said.

"Two thousand a bike, you shouldn't need to," Solomon Gursky replied. It was early afternoon up on Blood of Christ Mountain, high and hot and resinous with the scent of the old, old pines. There was haze down in the valley they had come from, and in the one they were riding to. "And you know I'm not that kind of engineer. My gears are a lot smaller. And they don't break."

Elena knew what kind of engineer he was, as he knew what kind of doctor she was. But the thing was new between them and at the stage where research colleagues who surprise themselves by becoming lovers like to pretend that they are mysteries to each other.

Elena's palmtop map showed a settlement five miles down the valley. It was called Redención. It might be the kind of place they could get welding done quick and good for *norte* dollars.

"Be happy, it's downhill," Elena said as she swung her electric-blue padded ass onto the saddle and plunged down off the ridge. One second later, Sol Gursky in his shirt and shorts and shoes and shades and helmet came tearing after her through the scrub sage. The thing between them was still at the stage where desire can flare at a flash of electric-blue lycra-covered ass.

Redención it was, of the kind you get in the border mountains; of gas and food and trailers to hire by the night, or the week, or, if you have absolutely nowhere else to go, the lifetime; of truck stops and recreational Jacuzzis at night under the border country stars. No welding. Something better. The many-branched saguaro of a solar tree was the first thing of Redención the travelers saw lift out of the heat haze as they came in along the old, cracked, empty highway.

The factory was in an ugly block annex behind the gas and food. A truck driver followed Sol and Elena round the back, entranced by these fantastic macaw-bright creatures who kept their eyes hidden behind wrap-around shades. He was chewing a sandwich. He had nothing better to do in Redención on a hot Monday afternoon. Jorge, the proprietor, looked too young and ambitious to be pushing gas, food, trailers, and molecules in Redención on any afternoon. He was thirty-wise, dark, serious. There was something tight-wound about him. Elena said in English that he had the look of a man of sorrows. But he took the broken gear train seriously, and helped Sol remove it

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from the back wheel. He looked at the smooth, clean shear plane with admiration.

"This I can do," he declared. "Take an hour, hour and a half. Meantime, maybe you'd like to take a Jacuzzi?" This, wrinkling his nose, downwind of two MTBers come over Blood of Christ Mountain in the heat of the day. The truck driver grinned. Elena scowled. "Very private," insisted Jorge the nanofacturer.

"Something to drink?" Elena suggested.

"Sure. Coke, Sprite, beer, *agua minerale*. In the shop."

Elena went the long way around the trucker to investigate the cooler. Sol followed Jorge into the factory and watched him set the gears in the scanner.

"Actually, this is my job," Sol said to make conversation as the lasers mapped the geometry of the ziggurat of cogs in three dimensions. He spoke Spanish. Everyone did. It was the universal language up in the *norte* now, as well as down *el sur*.

"You have a factory?"

"I'm an engineer. I build these things. Not the scanners, I mean; the tectors. I design them. A nano-engineer."

The monitor told Jorge the mapping was complete.

"For the Tesler *corporada*," Sol added as Jorge called up the processor system.

"How do you want it?"

"I'd like to know it's not going to do this to me again. Can you build it in diamond?"

"All just atoms, friend."

Sol studied the processor chamber. It pleased him that they looked like whisky stills; round-bellied, high-necked, rising through the roof into the spreading fingers of the solar tree. Strong spirits in that still, spirits of the vacuum between galaxies, the cold of absolute zero, and the spirits of the tectors moving through cold and emptiness, shuffling atoms. He regretted that the physics did not allow viewing windows in the nanofacturers. Look down through a pane of pure and perfect diamond at the act of creation. Maybe creation was best left unseen, a mystery. All just atoms, friend. Yes, but it was what you *did* with those atoms, where you made them go. The weird troilisms and menages you forced them into.

He envisioned the minuscule machines, smaller than viruses, clever knots of atoms, scavenging carbon through the nanofacturer's roots deep in the earth of Redención, passing it up the buckytube conduits to the processor chamber, weaving it into diamond of his own shaping.

Alchemy.

Diamond gears.

Sol Gursky shivered in his light biking clothes, touched by the intellectual chill of the nanoprocessor.

"This is one of mine," he called to Jorge. "I designed the tectors."

"I wouldn't know." Jorge fetched beers from a crate on the factory floor, opened them in the door. "I bought the whole place from a guy two years back. Went up north, to the *Tres Valles*. You from there?"

The beer was cold. In the deeper, darker cold of the reactor chamber, the nanomachines swarmed. Sol Gursky held his arms out: Jesus of the MTB wear.

"Isn't everyone?"

"Not yet. So, who was it you said you work for? Nanosis? Ewart-OzWest?"

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"Tesler Corp. I head up a research group into biological analogs."

"Never heard of them."

You will, was what Solomon Gursky would have said, but for the scream.

Elena's scream.

Not, he thought as he ran, that he had heard Elena's scream—the thing was not supposed to be at that stage—but he knew it could not belong to anyone else.

She was standing in the open back door of the gas and food, pale and shaky in the high bright light.

"I'm sorry," she said. "I just wanted to get some water. There wasn't any in the cooler, and I didn't want Coke. I just wanted to get some water from the faucet."

He was aware that Jorge was behind him as he went into the kitchen. Man mess: twenty coffee mugs, doughnut boxes, beer cans, and milk cartons. Spoons, knives, forks. He did that too, and Elena told him off for having to take a clean one every time.

Then he saw the figures through the open door.

Somewhere, Jorge was saying, "Please, this is my home."

There were three of them; a good-looking, hard-worked woman, and two little girls, one newly school-age, the other not long on her feet. They sat in chairs, hands on thighs. They looked straight ahead.

It was only because they did not blink, that their bodies did not rock gently to the tick of pulse and breath, that Sol could understand.

The color was perfect. He touched the woman's cheek, the coil of dark hair that fell across it. Warm soft. Like a woman's should feel. Texture like skin. His fingertips left a line in dust.

They sat unblinking, unmoving, the woman and her children, enshrined in their own memorabilia. Photographs, toys, little pieces of jewelry, loved books and ornaments, combs, mirrors. Pictures and clothes. Things that make up a life. Sol walked among the figures and their things, knowing that he trespassed in sacred space, but irresistibly drawn by the simulacra.

"They were yours?" Elena was saying somewhere. And Jorge was nodding, and his mouth was working but no words were manufactured. "I'm sorry, I'm so sorry."

"They said it was a blow-out." Jorge finally said. "You know, those tires they say repair themselves, so they never blow out? They blew out. They went right over the barrier, upside down. That's what the truck driver said. Right over, and he could see them all, upside down. Like they were frozen in time, you understand?" He paused.

"I went kind of dark for a long time after that; a lot crazy, you know? When I could see things again, I bought this with the insurance and the compensation. Like I say, it's all just atoms, friend. Putting them in the right order. Making them go where you want, do what you want."

"I'm sorry we intruded," Elena said, but Solomon Gursky was standing there among the reconstructed dead and the look on his face was that of a man seeing something far beyond what is in front of him, all the way to God.

"Folk out here are accommodating." But Jorge's smile was a tear of sutures. "You can't live in a place like this if you weren't a little crazy or lost."

"She was very beautiful," Elena said.

"She is."

Dust sparkled in the float of afternoon light through the window.

"Sol?"

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"Yeah. Coming."

The diamond gears were out of the tank in twenty-five minutes. Jorge helped Sol fit them to the two thousand *norte* dollar bike. Then Sol rode around the factory and the gas-food-trailer house where the icons of the dead sat unblinking under the slow fall of dust. He clicked the gears up and clicked them down. One two three four five six. Six five four three two one. Then he paid Jorge fifty *norte,* which was all he asked for his diamond. Elena waved to him as they rode down the highway out of Redención.

They made love by firelight on the top of Blessed Virgin Mountain, on the pine needles, under the stars. That was the stage they were at: ravenous, unselfconscious, discovering. The old deaths, down the valley behind them, gave them urgency. Afterward, he was quiet and withdrawn, and when she asked what he was thinking about, he said, "The resurrection of the dead."

"But they weren't resurrected," she said, knowing instantly what he meant, for it haunted her too, up on their starry mountain. "They were just *representations,* like a painting or a photograph. Sculpted memories. Simulations."

"But they were real for *him.*" Sol rolled onto his back to gaze at the warm stars of the border. "He told me he talked to them. If his nanofactory could have made them move and breathe and talk back, he'd have done it, and who could have said that they weren't real?"

He felt Elena shiver against his flesh.

"What is it?"

"Just thinking about those faces, and imagining them in the reactor chamber, in the cold and the emptiness, with the tectors crawling over them."

"Yeah."

Neither spoke for a time long enough to see the stars move. Then Solomon Gursky felt the heat stir in him again and he turned to Elena and felt the warmth of her meat, hungry for his second little death.

Tuesday

Jesus was getting fractious in the plastic cat carrier; heaving from side to side, shaking the grille.

Sol Gursky set the carrier on the landing mesh and searched the ochre smog haze for the incoming liftercraft. Photochromic molecules bonded to his irises polarized: another hot, bright, poisonous day in the TVMA.

Jesus was shrieking now.

"Shut the hell up," Sol Gursky hissed. He kicked the cat carrier. Jesus gibbered and thrust her arms through the grille, grasping at freedom.

"Hey, it's only a monkey," Elena said.

But that was the thing. Monkeys, by being monkeys, annoyed him. Frequently enraged him. Little homunculus things masquerading as human. Clever little fingers, wise little eyes, expressive little faces. Nothing but dumb animal behind that face, running those so-human fingers.

He knew his anger at monkeys was irrational. But he'd still enjoyed killing Jesus, taped wide open on the pure white slab. Swab, shave, slip the needle.

Of course, she had not been Jesus then. Just Rhesus; nameless, a tool made out of meat. Experiment 625G.

It was probably the smog that was making her scream. Should have got her one of those goggle things for walking poodles. But she would have just

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torn it off with her clever little human fingers. Clever enough to be dumb, monkey-thing.

Elena was kneeling down, playing baby-fingers with the clutching fists thrust through the bars.

"It'll bite you."

His hand still throbbed. Dripping, shivering, and spastic from the tank, Jesus had still possessed enough motor control to turn her head and lay his thumb open to the bone. Vampire monkey: the undead appetite for blood. Bastard thing. He would have enjoyed killing it again, if it were still killable.

All three on the landing grid looked up at the sound of lifter engines detaching themselves from the aural bed rock of two million cars. The ship was coming in from the south, across the valley from the big site down on Hoover where the new *corporada* headquarters was growing itself out of the fault line. It came low and fast, nose down, ass up, like a big bug that thrives on the taste of hydrocarbons in its spiracles. The backwash from its jets flustered the palm trees as it configured into vertical mode and came down on the research facility pad. Sol Gursky and Elena Asado shielded their sunscreened eyes from flying grit and leaf-storm.

Jesus ran from end to end of her plastic cage, gibbering with fear.

"Doctor Gursky." Sol did not think he had seen this *corporadisto* before, but it was hard to be certain; Adam Tesler liked his personal assistants to look as if he had nanofactured them. "I can't begin to tell you how excited Mr. Tesler is about this."

"You should be there with me," Sol said to Elena. "It was your idea." Then, to the suit, "Dr. Asado should be with me."

Elena swiped at her jet-blown hair.

"I shouldn't, Sol. It was your baby. Your gestation, your birth. Anyway, you know how I hate dealing with suits." This for the smiling PA, but he was already guiding Sol to the open hatch.

Sol strapped in and the ship lurched as the engines screamed up into lift. He saw Elena wave and duck back toward the facility. He clutched the cat carrier hard as his gut kicked when the lifter slid into horizontal flight. Within, the dead monkey burbled to herself in exquisite terror.

"What happened to your thumb?" the *corporadisto* asked.

When he'd cracked the tank and lifted Jesus the Rhesus out of the waters of rebirth, the monkey had seemed more pissed off at being sopping wet than at having been dead. There had been a pure, perfect moment of silence, then the simultaneous oath and gout of blood, and the Lazarus team had exploded into whooping exultation. The monkey had skittered across the floor, alarmed by the hooting and cheering, hunting for height and hiding. Elena had caught it spastically trying—and failing—to hurl itself up the side of a desk. She'd swaddled Jesus up in thermal sheeting and put the spasming thing in the observation incubator. Within the hour, Jesus had regained full motor control and was chewing at the corners of her plastic pen, scratching imaginary fleas and masturbating ferociously. While delivery companies dropped off pizza stacks and cases of cheap Mexican champagne, someone remembered to call Adam Tesler.

The dead monkey was not a good flier. She set up a wailing keen that had even the pilot complaining.

"Stop that," Sol Gursky snapped. It would not do anything for him, though, and rocked on its bare ass and wailed all the louder.

"What way is that to talk to a piece of history?" the PA said. He grinned in

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through the grille, waggled fingers, clicked tongue. "Hey there, little fellow. Whatcha call him?"

"Little bitch, actually. We call her Jesus; also known as Bride of Frankenstein."

Bite him, Solomon Gursky thought as ten thousand mirrored swimming pools slipped beneath the belly of the Tesler *Corporada* lifter.

Frankenstein's creations were dead. That was the thing. That was the revelation.

It was the Age of Everything, but the power to make anything into anything else was not enough, because there was one thing the tectors of Nanosis and Aristide-Tlaxcalpo and the other founders of the nanotech revolution could not manipulate into anything else, and that was death. A comment by a pioneer nanotechnologist captured the optimism and frustration of the Age of Everything: Watson's Postulate. *Never mind turning trash into oil or asteroids into heaps of Volkswagens, or hanging exact copies of Van Goghs in your living room; the first thing we get with nanotechnology is immortality.*

Five billion Rim dollars in research disproved it. What tectors touched, they transformed; what they transformed, they killed. The Gursky-Asado team had beaten its rivals to the viral replicators, that infiltrated living cells and converted them into a different, tector-based matrix, and from their DNA spored a million copies. It had shaped an algorithm from the deadly accuracy of carcinomas. It had run tests under glass and in tanks. It had christened that other nameless Rhesus Frankenstein and injected the tectors. And Sol and Elena had watched the tiny machines slowly transform the monkey's body into something not even gangrene could imagine.

Elena wanted to put it out of its misery, but they could not open the tank for fear of contamination. After a week, it ended.

The monster fell apart. That was the thing. And then Asado and Gursky remembered a hot afternoon when Sol got a set of diamond gears built in a place called Redención.

If death was a complex thing, an accumulation of micro-death upon minideath upon little death upon middling death, life might obey the same power law. Escalating anti-entropy. Pyramid-plan life.

Gursky's Corollary to Watson's Postulate: *The first thing we get with nanotechnology is the resurrection of the dead.*

The Dark Tower rose out of the amber haze. Sol and Elena's private joke had escaped and replicated itself; everyone in R&D now called the thing Adam Tesler was building down in the valley Barad Dur, in Mordor, where the smogs lie. And Adam Tesler, its unresting, all-seeing Eye.

There were over fifty levels of it now, but it showed no signs of stopping. As each section solidified and became dormant, another division of Adam Tesler's corporate edifice was slotted in. The architects were unable to say where it would stop. A kilometer, a kilometer and a half; maybe then the architectors would stabilize and die. Sol loathed its glossy black excrescences and crenellations, a miscegeny of the geological and the cancerous. Gaudi sculpting in shit.

The lifter came in high over the construction, locked into the navigation grid and banked. Sol looked down into its open black maw.

All just atoms, the guy who owned the factory had said. Sol could not remember his name now. The living and the dead have the same atoms.

They'd started small: paramecia, amoebae. Things hardly alive. Inverte-

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brates. Reanimated cockroaches, hurtling on their thin legs around the observation tank. Biological machine, nanotech machine, still a machine. Survival machine. Except now you couldn't stomp the bastards. They came back.

What good is resurrection, if you are just going to die again?

The cockroaches came back, and they kept coming back.

He had been the cautious one this time, working carefully up the evolutionary chain. Elena was the one who wanted to go right for it. Do the monkey. Do the monkey and you do the man.

He had watched the tectors swarm over it, strip skin from flesh, flesh from bone, dissolve bones. He had watched the nanomachines put it all back together into a monkey. It lay in the liquid intact, but, its signs said, dead. Then the line kicked, and kicked again, and another twitched in harmony, and a third came in, and then they were all playing together on the vital signs monitor, and that which was dead was risen.

The lifter was into descent, lowering itself toward the exact center of the white cross on the landing grid fastened to the side of the growing tower. Touchdown. The craft rocked on its bug legs. Seat-belt sign off, steps down.

"You behave yourself," Solomon Gursky told Jesus.

The All-Seeing Eye was waiting for him by the upshaft. His Dark Minions were with him.

"Sol."

The handshake was warm and strong, but Sol Gursky had never trusted Adam Tesler in all the years he had known him; as nanoengineering student or as head of the most dynamic nanotech *corporada* in the Pacific Rim Co-Prosperity Sphere.

"So this is it?" Adam Tesler squatted down and choo-choo-chooked the monkey.

"She bites."

"I see." Jesus grabbed his thumb in her tiny pink homunculus hand. "So, you are the man who has beaten the final enemy."

"Not beaten it. Found something on the far side of it. It's resurrection, not immortality."

Adam Tesler opened the cage. Jesus hopped up his arm to perch on the shoulder of his Scarpacchi suit. Tesler tickled the fur of her belly.

"And humans?"

"Point one percent divergence between her DNA and yours."

"Ah." Adam Tesler closed his eyes. "This makes it all the harder."

Fear pulsed through Solomon Gursky like a sickness.

"Leave us, please," Adam Tesler said to his assistants. "I'll join you in a moment."

Unspeaking, they filed to the lifter.

"Adam?"

"Sol. Why did you do it?"

"What are you talking about, Adam?"

"You know, Sol."

For an instant, Sol Gursky died on the landing grid fused to the fifty-third level of the Tesler *corporada* tower. Then he returned to life, and knew with cool and beautiful clarity that he could say it all, that he *must* say it all, because he was dead now and nothing could touch him.

"It's too much for one person, Adam. This isn't building cars or growing houses or nanofacturing custom pharmaceuticals. This is the resurrection of the dead. This is every human being from now to the end of the universe. You

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can't be allowed to own that. Not even God should have a monopoly on eternal life."

Adam Tesler sighed. His irises were photochromed dark, their expression unreadable.

"So. How long is it?"

"Thirteen years."

"I thought I knew you, Sol."

"I thought I knew you." The air was clear and fresh and pure, here on this high perch. "How did you find out?"

Adam Tesler stroked the monkey's head. It tried to push his fingers away, baring sharp teeth.

"You can come here now, Marisa."

The tall, muscular woman who walked from the upshaft across the landing grid was no stranger to Sol. He knew her from the Yucatan resort mastaba and the Alaskan ski-lodge and the gambling complex grown out of the nanoengineered reef in the South China Sea. From clandestine conversations through secure channels and discreet meetings, he knew that her voice would be soft and low and tinted Australian.

"You dressed better when you worked for Aristide Tlaxcalpo," Sol said. The woman was dressed in street leathers. She smiled. She had smiled better then as well.

"Why them?" Adam Tesler said. "Of all the ones to betray me to, *those* clowns!"

"That's why," said Solomon Gursky. "Elena had nothing to do with this, you know."

"I know that. She's safe. For the moment."

Sol Gursky knew then what must happen, and he shivered with the sudden, urgent need to destroy before he was destroyed. He pushed down the shake of rage by force of will as he held his hand out and clicked his fingers to the monkey. Jesus frowned and frisked off Tesler's shoulder to Sol's hand. In an instant, he had stretched, twisted, and snapped its neck. He flung the twitching thing away from him. It fell to the red mesh.

"I can understand that," Adam Tesler said. "But it will come back again, and again, and again." He turned on the bottom step of the lifter. "Have you any idea how disappointed I am, Sol?"

"I really don't give a shit!" Solomon Gursky shouted but his words were swallowed by the roar of engine power-up. The lifter hovered and swooped down over the great grid of the city toward the northern hills.

Sol Gursky and Marisa were alone on the platform.

"Do it!" he shouted.

Those muscles he had so admired, he realized, were augments; her fingers took a fistful of his neck and lifted him off the ground. Strangling, he kicked at air, snatched at breath. One-armed, she carried him to the edge.

"Do it," he tried to say, but her fingers choked all words in his throat. She held him out over the drop, smiling. He shat himself, and realized as it poured out of him that it was ecstasy, that it always had been, and the reason that adults forbade it was precisely because it was such a primal joy.

Through blood haze, he saw the tiny knotted body of Jesus inching toward him on pink man-fingers, its neck twisted over its back, eyes staring unshielded into the sun. Then the woman fingers at last released their grip, and he whispered "thank you" as he dropped toward the hard white death-light of Hoover Boulevard.

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Wednesday

The *seguridados* were on the boulevards tonight, hunting the trespassing dead. The meat were monsters, overmoneyed, understimulated, *cerristo* males and females who deeply enjoyed playing angels of Big Death in a world where any other kind of death was temporary. The meat were horrors, but their machines were beautiful. *Mechadors*: robot mantises with beaks of vanadium steel and two rapid fire MIST 27s throwing fifty self-targeting drones per second, each separating into a hail of sun-munitions half a second before impact. Fifteen wide-spectrum senses analyzed the world; the machines maneuvered on tightly focused impeller fields. And absolutely no thought or mercy. Big beautiful death.

The window in the house in the hills was big and wide and the man stood in the middle of it. He was watching the *mechadors* hunt. There were four of them, two pairs working each side of the avenue. He saw the one with *Necroslayer* painted on its tectoplastic skin bound over the shrubbery from the Sifuentes place in a single pulse of focused electrogravitic force. It moved over the lawn, beaked head sensing. It paused, scanned the window. The man met its five cluster eyes for an instant. It moved on. Its impeller drive left eddy patterns on the shaved turf. The man watched until the *mechadors* passed out of sight, and the *seguridados* in their over-emphatic battle-armor came up the avenue, covering imagined threats with their hideously powerful weapons.

"It's every night now," he said. "They're getting scared."

In an instant, the woman was in the big, wood-floored room where the man stood. She was dressed in a virtuality bodyglove; snapped tendrils retracting into the suit's node points indicated the abruptness with which she had pulled out of the web. She was dark and very angry. Scared angry.

"Jesus Joseph Mary, how many times do I have to *tell* you? Keep away from that window! They catch you, you're dead. Again. *Permanently*."

Solomon Gursky shrugged. In the few weeks that he had lived in her house, the woman had come to hate that shrug. It was a shrug that only the dead can make. She hated it because it brought the chill of the abyss into her big, warm, beautiful house in the hills.

"It changes things," the dead man said.

Elena Asado pulled smart-leather pants and a mesh top over the bodyglove. Since turning traitor, she'd lived in the thing. Twelve hours a day hooked into the web by eye and ear and nose and soul, fighting the man who had killed her lover. As well fight God, Solomon Gursky thought in the long, empty hours in the airy, light-filled rooms. He is lord of life and death. Elena only removed the bodyglove to wash and excrete and, in those early, blue-lit mornings that only this city could do, when she made chilly love on the big white bed. Time and anger had made her thin and tough. She'd cut her hair like a boy's. Elena Asado was a tight wire of a woman, femininity jerked away by her need to revenge herself on Adam Tesler by destroying the world order his gift of resurrection had created.

Not gift. Never gift. He was not Jesus, who offered eternal life to whoever believed. No profit in belief. Adam Tesler took everything and left you your soul. If you could sustain the heavy *inmortalidad* payments, insurance would take you into post-life debt-free. The other 90 percent of Earth's dead worked out their salvation through indenture contracts to the Death House, the Tesler Thanos *corporada's* agent of resurrection. The *contratos* were centuries long. Time was the province of the dead. They were cheap.

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"The Ewart/OzWest affair has them rattled," Elena Asado said.

"A handful of *contradados* renege on their contracts out on some asteroid, and they're afraid the sky is going to fall on their heads?"

"They're calling themselves the Freedead. You give a thing a name, you give it power. They know it's the beginning. Ewart/OzWest, all the other orbital and deep-space manufacturing *corporadas*; they always knew they could never enforce their contracts off Earth. They've lost already. Space belongs to the dead," the meat woman said.

Sol crossed the big room to the other window, the safe window that looked down from the high hills over the night city. His palm print deconfigured the glass. Night, city night perfumed with juniper and sex and smoke and the dusky heat of the heat of the day, curled around him. He went to the balcony rail. The boulevards shimmered like a map of a mind, but there was a great dark amnesia at its heart, an amorphous zone where lights were not, where the geometry of the grid was abolished. St. John. Necroville. Dead town. The city of the dead, a city within a city, walled and moated and guarded with the same weapons that swept the boulevards. City of curfew. Each dusk, the artificial aurora twenty kilometers above the Tres Valles Metropolitan Area would pulse red: the skysign, commanding all the three million dead to return from the streets of the living to their necrovilles. They passed through five gates, each in the shape of a massive V bisected by a horizontal line. The entropic flesh life descending, the eternal resurrected life ascending, through the dividing line of death. That was the law, that plane of separation. Dead was dead, living was living. As incompatible as night and day.

That same sign was fused into the palm of every resurrectee that stepped from the Death House Jesus tanks.

Not true, he thought. Not all are reborn with stigmata. Not all obey curfew. He held his hand before his face, studied the lines and creases, as if seeking a destiny written there.

He had seen the deathsign in the palm of Elena's housegirl, and how it flashed in time to the aurora.

"Still can't believe it's real?"

He had not heard Elena come onto the balcony behind him. He felt the touch of her hand on his hair, his shoulder, his bare arm. Skin on skin.

"The Nez Perce tribe believe the world ended on the third day, and what we are living in are the dreams of the last night. I fell. I hit that white light and it was hard. Hard as diamond. Maybe I dream I live, and my dreams are the last shattered moments of my life."

"Would you dream it like this?"

"No," he said after a time. "I can't recognize anything any more. I can't see how it connects to what I last remember. So much is missing."

"I couldn't make a move until I was sure he didn't suspect. He'd done a thorough job."

"He would."

"I never believed that story about the lifter crash. The universe may be ironic, but it's never neat."

"I think a lot about the poor bastard pilot he took out as well, just to make it neat." The air carried the far sound of drums from down in the dead town. Tomorrow was the great feast, the Night of All the Dead. "Five years," he said. He heard the catch in her breathing and knew what she would say next, and what would follow.

"What is it like, being dead?" Elena Asado asked.

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In his weeks imprisoned in the hill house, an unlawful dead, signless and contractless, he had learned that she did not mean, what was it like to be resurrected. She wanted to know about the darkness before.

"Nothing," he answered, as he always did, but though it was true, it was not the truth, for nothing is a product of human consciousness and the darkness beyond the shattering hard light at terminal vee on Hoover Boulevard was the end of all consciousness. No dreams, no time, no loss, no light, no dark. No thing.

Now her fingers were stroking his skin, feeling for some of the chill of the no-thing. He turned from the city and picked her up and carried her to the big empty bed. A month of new life was enough to learn the rules of the game. He took her in the big, wide white bed by the glow from the city beneath, and it was as chill and formulaic as every other time. He knew that for her it was more than sex with her lover come back from a far exile. He could feel in the twitch and splay of her muscles that what made it special for her was that he was *dead*. It delighted and repelled her. He suspected that she was incapable of orgasm with fellow meat. It did not trouble him, being her fetish. The body once known as Solomon Gursky knew another thing, that only the dead could know. It was that not everything that died was resurrected. The shape, the self, the sentience came back, but love did not pass through death.

Afterward, she liked him to talk about his resurrection, when no-thing became thing and he saw her face looking down through the swirl of tectors. This night he did not talk. He asked. He asked, "What was I like?"

"Your body?" she said. He let her think that. "You want to see the morgue photographs again?"

He knew the charred grin of a husk well enough. Hands flat at his sides. That was how she had known right away. Burn victims died with their fists up, fighting incineration.

"Even after I'd had you exhumed, I couldn't bring you back. I know you told me that he said I was safe, for the moment, but that moment was too soon. The technology wasn't sophisticated enough, and he would have known right away. I'm sorry I had to keep you on ice."

"I hardly noticed," he joked.

"I always meant to. It was planned; get out of Tesler Thanos, then contract an illegal Jesus tank down in St. John. The Death House doesn't know one tenth of what's going on in there."

"Thank you," Sol Gursky said, and then he felt it. He felt it and he saw it as if it were his own body. She felt him tighten.

"Another flashback?"

"No," he said. "The opposite. Get up."

"What?" she said. He was already pulling on leather and silk.

"That moment Adam gave you."

"Yes?"

"It's over."

The car was morphed into low and fast configuration. At the bend where the avenue slung itself down the hillside, they both felt the pressure wave of something large and flying pass over them, very low, utterly silent.

"Leave the car," he ordered. The doors were already gull-winged open. Three steps and the house went up behind them in a rave of white light. It seemed to suck at them, drawing them back into its annihilating gravity, then the shock swept them and the car and every homeless thing on the avenue before it. Through the screaming house alarms and the screaming

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householders and the rush and roar of the conflagration, Sol heard the aircraft turn above the vaporized hacienda. He seized Elena's hand and ran. The lifter passed over them and the car vanished in a burst of white energy.

"Jesus, nanotok warheads!"

Elena gasped as they tumbled down through tiered and terraced gardens. The lifter turned high on the air, eclipsing the hazy stars, hunting with extra-human senses. Below, formations of *seguridados* were spreading out through the gardens.

"How did you know?" Elena gasped.

"I saw it," said Solomon Gursky as they crashed a pool party and sent bacchanalian *cerristos* scampering for cover. Down, down. Augmented cyberhounds growled and quested with long-red eyes; domestic defense grids stirred, captured images, alerted the police.

"Saw?" asked Elena Asado.

APVs and city pods cut smoking hexagrams in the highway blacktop as Sol and Elena came crashing out of the service alley onto the boulevard. Horns. Lights. Fervid curses. Grind of wheels. Shriek of brakes. Crack of smashing tectoplastic, doubled, redoubled. Grid-pile on the westway. A mopedcab was pulled in at a *tortilleria* on the right shoulder. The *cochero* was happy to pass up his enchiladas for Elena's hard, black currency. Folding, clinking stuff.

"Where to?"

The destruction his passengers had wreaked impressed him. Taxi drivers universally hate cars.

"Drive," Solomon Gursky said.

The machine kicked out onto the strip.

"It's still up there," Elena said, squinting out from under the canopy at the night sky.

"They won't do anything in this traffic."

"They did it up there on the avenue." Then: "You said you saw. What do you mean, *saw?*"

"You know death, when you're dead," Solomon Gursky said. "You know its face, its mask, its smell. It has a perfume, you can smell it from a long way off, like the pheromones of moths. It blows upwind in time."

"Hey," the *cochero* said, who was poor, but live meat. "You know anything about that big boom up on the hill? What was that, lifter crash or something?"

"Or something," Elena said. "Keep driving."

"Need to know where to keep driving to, lady."

"Necroville," Solomon Gursky said. St. John. City of the Dead. The place beyond law, morality, fear, love, all the things that so tightly bound the living. The outlaw city. To Elena he said, "If you're going to bring down Adam Tesler, you can only do it from the outside, as an outsider." He said this in English. The words were heavy and tasted strange on his lips. "You must do it as one of the dispossessed. One of the dead."

To have tried to run the fluorescent vee-slash of the Necroville gate would have been as certain a Big Death as to have been reduced to hot ion dust in the nanotok flash. The mopedcab prowled past the samurai silhouettes of the gate *seguridados*. Sol had the driver leave them beneath the dusty palms on a deserted boulevard pressed up hard against the razor wire of St. John. Abandoned by the living, the grass verges had run verdant, scum and lilies scabbed the swimming pools, the generous Spanish-style houses softly disintegrating, digested by their own gardens.

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It gave the *cochero* spooky vibes, but Sol liked it. He knew these avenues. The little machine putt-putted off for the lands of the fully living.

"There are culverted streams all round here," Sol said. "Some go right under the defenses, into Necroville."

"Is this your dead-sight again?" Elena asked as he started down an overhung service alley.

"In a sense. I grew up around here."

"I didn't know that."

"Then I can trust it."

She hesitated a step.

"What are you accusing me of?"

"How much did you rebuild, Elena?"

"Your memories are your own, Sol. We loved each other, once."

"Once," he said, and then he felt it, a static purr on his skin, like Elena's fingers over his whole body at once. This was not the psychic bloom of death foreseen. This was physics, the caress of focused gravity fields.

They hit the turn of the alley as the *mechadors* came dropping soft and slow over the roofs of the old moldering *residencias*. Across a weed-infested tennis court was a drainage ditch defended by a rusted chicken-wire fence. Sol heaved away an entire section. Adam Tesler had built his dead strong, and fast. The refugees followed the seeping, rancid water down to a rusted grille in a culvert.

"Now we see if the Jesus tank grew me true," Sol said as he kicked in the grille. "If what I remember is mine, then we come up in St. John. If not, we end up in the bay three days from now with our eyes eaten out by chlorine."

They ducked into the culvert as a *mechador* passed over. MIST 27s sent the mud and water up in a blast of spray and battle tectors. The dead man and the living woman splashed on into darkness.

"He loved you, you know," Sol said. "That's why he's doing this. He is a jealous God. I always knew he wanted you, more than that bitch he calls a wife. While I was dead, he could pretend that it might still be. He could overlook what you were trying to do to him; you can't hurt him, Elena, not on your own. But when you brought me back, he couldn't pretend any longer. He couldn't turn a blind eye. He couldn't forgive you."

"A petty God," Elena said, water eddying around her leather-clad calves. Ahead, a light from a circle in the roof of the culvert marked a drain from the street. They stood under it a moment, feeling the touch of the light of Necroville on their faces. Elena reached up to push open the grate. Solomon Gursky stayed her, turned her palm upward to the light.

"One thing." he said. He picked a sharp shard of concrete from the tunnel wall. With three strong savage strokes he cut the vee and slash of the death sign in her flesh.

Thursday

He was three kilometers down the mass driver when the fleet hit Marlene Dietrich. St. Judy's Comet was five AU from perihelion and out of ecliptic, the Clade thirty-six degrees out, but for an instant two suns burned in the sky.

The folds of transparent tectoplastic skin over Solomon Gursky's face opaqued. His *sur*-arms gripped the spiderwork of the interstellar engine, rocked by the impact on his electromagnetic senses of fifty minitok warheads

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converting into bevawatts of hard energy. The death scream of a nation. Three hundred Freedead had cluttered the freefall warren of tunnels that honeycombed the asteroid. Marlene Dietrich had been the seed of the rebellion. The *corporadas* cherished their grudges.

Solomon Gursky's face-shield cleared. The light of Marlene Dietrich's dying was short-lived but its embers faded in his infravision toward the stellar background.

Elena spoke in his skull.

You know?

Though she was enfolded in the command womb half a kilometer deep within the comet, she was naked to the universe through identity links to the sensor web in the crust and a nimbus of bacterium-sized spyships weaving through the tenuous gas halo.

I saw it, Solomon Gursky subvocalized.

They'll come for us now, Elena said.

You think. Using his *bas*-arms Sol clambered along the slender spine of the mass driver toward the micro meteorite impact.

I know. When long-range cleared after the blast, we caught the signatures of blip-fusion burns.

Hand over hand over hand over hand. One of the first things you learn, when the Freedead change you, is that in space it is all a question of attitude. A third of the way down a nine-kilometer mass driver with several billion tons of Oort comet spiked on it, you don't think up, you don't think down. *Up,* and it is vertigo. *Down,* and a two kilometer sphere of grubby ice is poised above your head by a thread of superconducting tectoplastic. *Out,* that was the only way to think of it and stay sane. Away, and back again.

How many drives? Sol asked. The impact pin-pointed itself; the smart plastic fluoresced orange when wounded.

Eight.

A sub-voiced blasphemy. *They didn't even make them break sweat. How long have we got?*

Elena flashed the projections through the em-link onto his visual cortex. Curves of light through darkness and time, warped across the gravitation marches of Jupiter. Under current acceleration, the Earth fleet would be within strike in eighty-two hours.

The war in heaven was in its twelfth year. Both sides had determined that this was to be the last. The NightFreight War would be fought to an outcome. They called themselves the Clades, the outlaw descendants of the original Ewart/OzWest asteroid rebellion: a handful of redoubts scattered across the appalling distances of the solar system. Marlene Dietrich, the first to declare freedom; Neruro, a half-completed twenty kilometer wheel of tectoplastic attended by O'Neill can utilities, agriculture tanks, and habitation bubbles, the aspirant capital of the space Dead. Ares Orbital, dreaming of tectoformed Mars in the pumice pore spaces of Phobos and Deimos; the Pale Gallileans, surfing over the icescapes of Europa on an improbable raft of cables and spars; the Shepherd Moons, dwellers on the edge of the abyss, sailing the solar wind through Saturn's rings. Toe-holds, shallow scratchings, space-hovels; but the stolen nanotechnology burgeoned in the energy-rich environment of space. An infinite ecological niche. The Freedead knew they were the inheritors of the universe. The meat *corporadas* had withdrawn to the orbit of their planet. For a time. When they struck, they struck decisively. The Tsiolkovski Clade on the dark side of the moon was the first to fall as the battle

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groups of the *corporadas* thrust outward. The delicate film of vacuum-compatible tectoformed forest that carpeted the crater was seared away in the alpha strike. By the time the last strike went in, a new five-kilometer deep crater of glowing tufa replaced the tunnels and excavations of the old lunar mining base. Earth's tides had trembled as the moon staggered in its orbit.

Big Big Death.

The battle groups moved toward their primary targets. The *corporadas* had learned much embargoed under their atmosphere. The new ships were lean, mean, fast: multiple missile racks clipped to high-gee blip-fusion motors, pilots suspended in acceleration gel like flies in amber, hooked by every orifice into the big battle virtualizers.

Thirteen-year-old boys had the best combination of reaction time and viciousness.

Now the blazing teenagers had wantonly destroyed the Marlene Dietrich Clade. Ares Orbital was wide open; Neruro, where most of the Freedead slamship fleet was based, would fight hard. Two *corporada* ships had been dispatched Jupiterward. Orbital mechanics gave the defenseless Pale Gallileans fifteen months to contemplate their own annihilation.

But the seed has flown, Solomon Gursky thought silently, out on the mass driver of St. Judy's Comet. Where we are going, neither your most powerful ships nor your most vicious boys can reach us.

The micrometeorite impact had scrambled the tectoplastic's limited intelligence: fibers and filaments of smart polymer twined and coiled, seeking completion and purpose. Sol touched his *sur*-hands to the surfaces. He imagined he could feel the order pass out of him, like a prickle of tectors osmosing through vacuum-tight skin.

Days of miracles and wonder, Adam, he thought. And because you are jealous that we are doing things with your magic you never dreamed, you would blast us all to photons.

The breach was repaired. The mass driver trembled and kicked a pellet into space, and another, and another. And Sol Gursky, working his way hand over hand over hand over hand down the device that was taking him to the stars, saw the trick of St. Judy's Comet. A ball of fuzzy ice drawing a long tail behind it. Not a seed, but a sperm, swimming through the big dark. Thus we impregnate the universe.

St. Judy's Comet. Petite as Oort cloud family members go: two point eight by one point seven by two point two kilometers. (Think of the misshaped potato you push to the side of your plate because anything that looks that weird is sure to give you cramps.) Undernourished, at sixty-two billion tons. Waif and stray of the solar system, wandering slow and lonely back out into the dark after her hour in the sun (but not too close, burn you real bad, too much sun) when these dead people snatch her, grope her all over, shove things up her ass, mess with her insides, make her do strange and unnatural acts, like shitting tons of herself away every second at a good percentage of the speed of light. Don't you know you ain't no comet no more? You're a *starship*. See up there, in the Swan, just to the left of that big bright star? There's a little dim star you can't see. That's where you're going, little St. Judy. Take some company. Going to be a long trip. And what will I find when I get there? A big bastard MACHO of gas supergiant orbiting 61 Cygni at the distance of Saturn from the sun, that's what you'll find. Just swarming with moons; one of them should be right for terrestrial life. And if not, no matter; sure, what's the difference between tectoforming an asteroid, or a comet, or

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the moon of an extra-solar gas super-giant? Just scale. You see, we've got everything we need to tame a new solar system right here *with* us. It's all just carbon, hydrogen, nitrogen, and oxygen, and you have that in abundance. And maybe we like you so much that we find we don't even need a world at all. Balls of muck and gravity, hell; we're the Freedead. Space and time belong to us.

It was Solomon Gursky, born in another century, who gave the ship its name. In that other century, he had owned a large and eclectic record collection. On vinyl.

The twenty living dead crew of St. Judy's Comet gathered in the command womb embedded in sixty-two billion tons of ice to plan battle. The other five hundred and forty were stored as superconducting tector matrices in a helium ice core; the dead dead, to be resurrected out of comet stuff at their new home. The crew hovered in nanogee in a score of different orientations around the free-floating instrument clusters. They were strange and beautiful, as gods and angels are. Like angels, they flew. Like gods in some pantheons, they were four-armed. Fine, manipulating *sur*-arms; strong grasping *bas*-arms growing from a lower spine reconfigured by Jesus tanks into powerful anterior shoulder-blades. Their vacuum-and-radiation-tight skins were photosynthetic, and as beautifully marked and colored as a hunting animal's. Stripes, swirls of green on orange, blue on black, fractal patterns, flags of legendary nations, tattoos. Illustrated humans.

Elena Asado, caressed by tendrils from the sensor web, gave them the stark news. Fluorescent patches on shoulders, hips, and groin glowed when she spoke.

"The bastards have jumped vee. They must have burned every last molecule of hydrogen in their thruster tanks to do it. Estimated to strike range is now sixty-four hours."

The *capitan* of St. Judy's Comet, a veteran of the Marlene Dietrich rebellion, shifted orientation to face Jorge, the ship's reconfiguration engineer.

"Long range defenses?" *Capitan* Savita's skin was an exquisite mottle of pale green bamboo leaves in sun yellow, an incongruous contrast to the tangible anxiety in the command womb.

"First wave missiles will be fully grown and launch-ready in twenty-six hours. The fighters, no. The best I can push the assemblers up to is sixty-six hours."

"What can you do in time?" Sol Gursky asked.

"With your help, I could simplify the fighter design for close combat."

"How close?" *Capitan* Savita asked.

"Under a hundred kays."

"How simplified?" Elena asked.

"Little more than an armed exo-skeleton with maneuvering pods."

And they need to be clever every time, Sol thought. The meat need to be clever only once.

Space war was as profligate with time as it was with energy and distance. With the redesigns growing, Sol Gursky spent most of the twenty-six hours to missile launch on the ice, naked to the stars, imagining their warmth on his face-shield. Five years since he had woken from his second death in a habitat bubble out at Marlene Dietrich, and stars had never ceased to amaze him. When you come back, you are tied to the first thing you see. Beyond the transparent tectoplastic bubble, it had been stars.

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The first time, it had been Elena. Tied together in life, now in death. Necroville had not been sanctuary. The place beyond the law only gave Adam Tesler new and more colorful opportunities to incarnate his jealousy. The Benthic Lords, they had called themselves. Wild, free, dead. They probably had not known they were working for Tesler-Thanos, but they took her out in a dead bar on Terminal Boulevard. With a game-fishing harpoon. They carved their skull symbol on her forehead, a rebuttal of the deathsign Sol had cut in her palm. Now you are really dead, meat. He had known they would never be safe on Earth. The *companeros* in the Death House had faked the off-world NightFreight contracts. The pill Sol took had been surprisingly bitter, the dive into the white light as hard as he remembered.

Stars. You could lose yourself in them; spirit strung out, orb gazing. Somewhere out there was a still-invisible constellation of eight, tight formation, silent running. Killing stars. Death stars.

Everyone came up to watch the missiles launch from the black foramens grown out of the misty ice. The chemical motors burned at twenty kays: a sudden galaxy of white stars. They watched them fade from sight. Twelve hours to contact. No one expected them to do any more than waste a few thousand rounds of the meat's point defenses.

In a dozen manufacturing pods studded around St. Judy's dumpy waist, Jorge and Sol's fighters gestated. Their slow accretion, molecule by molecule, fascinated Sol. Evil dark things, St. Andrew's crosses cast in melted bone. At the center a human-shaped cavity. You flew spread-eagled. *Bas*-hands gripped thruster controls; *sur*-hands armed and aimed the squirt lasers. Dark flapping things Sol had glimpsed once before flocked again at the edges of his consciousness. He had cheated the dark premonitory angels that other time. He would sleight them again.

The first engagement of the battle of St. Judy's Comet was at 01:45 GMT. Solomon Gursky watched it with his crewbrethren in the ice-wrapped warmth of the command womb. His virtualized sight perceived space in three dimensions. Those blue cylinders were the *corporada* ships. That white swarm closing from a hundred different directions, the missiles. One approached a blue cylinder and burst. Another, and another; then the inner display was a glare of novas as the first wave was annihilated. The back-up went in. The vanguard exploded in beautiful futile blossoms of light. Closer. They were getting closer before the meat shredded them. Sol watched a warhead loop up from due south, streak toward the point ship, and annihilate it in a red flash.

The St. Judy's Cometeers cheered. One gone, reduced to bubbling slag by tectors sprayed from the warhead.

One was all they got. It was down to the fighter pilots now.

Sol and Elena made love in the count-up to launch. *Bas*-arms and *sur*-arms locked in the freegee of the forward observation blister. Stars described slow arcs across the transparent dome, like a sky. Love did not pass through death; Elena had realized this bitter truth about what she had imagined she had shared with Solomon Gursky in her house on the hillside. But love could grow, and become a thing shaped for eternity. When the fluids had dried on their skins, they sealed their soft, intimate places with vacuum-tight skin and went up to the launch bays.

Sol fitted her into the scooped-out shell. Tectoplastic fingers gripped Elena's body and meshed with her skin circuitry. The angel-suit came alive. There was a trick they had learned in their em-telepathy; a massaging of the

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limbic system like an inner kiss. One mutual purr of pleasure, then she cast off, suit still dripping gobs of frozen tectopolymer. St. Judy's defenders would fight dark and silent; that mental kiss would be the last radio contact until it was decided. Solomon Gursky watched the blue stutter of the thrusters merge with the stars. Reaction mass was limited; those who returned from the fight would jettison their angel-suits and glide home by solar sail. Then he went below to monitor the battle through the tickle of molecules in his frontal lobes.

St. Judy's Angels formed two squadrons: one flying anti-missile defense, the other climbing high out of the ecliptic to swoop down on the *corporada* ships and destroy them before they could empty their weapon racks. Elena was in the close defense group. Her angelship icon was identified in Sol's inner vision in red on gold tiger stripes of her skin. He watched her weave intricate orbits around St. Judy's Comet as the blue cylinders of the meat approached the plane labeled "strike range."

Suddenly, seven blue icons spawned a cloud of actinic sparks, raining down on St. Judy's Comet like fireworks.

"Jesus Joseph Mary!" someone swore quietly.

"Fifty-five gees," *Capitan* Savita said calmly. "Time to contact, one thousand and eighteen seconds."

"They'll never get them all," said Kobe with the Mondrian skin pattern, who had taken Elena's place in remote sensing.

"We have one hundred and fifteen contacts in the first wave," Jorge announced.

"Sol, I need delta vee," Savita said.

"More than a thousandth of a gravity and the mass driver coils will warp," Sol said, calling overlays onto his visual cortex.

"Anything that throws a curve into their computations," Savita said.

"I'll see how close I can push it."

He was glad to have to lose himself in the problems of squeezing a few millimeters per second squared out of the big electromagnetic gun, because then he would not be able to see the curve and swoop of attack vectors and intercept planes as the point defense group closed with the missiles. Especially he would not have to watch the twine and loop of the tiger-striped cross and fear that at any instant it would intersect with a sharp blue curve in a flash of annihilation. One by one, those blue stars were going out, he noticed, but slowly. Too slowly. Too few.

The computer gave him a solution. He fed it to the mass driver. The shift of acceleration was as gentle as a catch of breath.

Thirty years since he had covered his head in a synagogue, but Sol Gursky prayed to Yahweh that it would be enough.

One down already; Emilio's spotted indigo gone, and half the missiles were still on trajectory. Time to impact ticked down impassively in the upper right corner of his virtual vision. Six hundred and fifteen seconds. Ten minutes to live.

But the attack angels were among the *corporadas*, dodging the brilliant flares of short range interceptor drones. The meat fleet tried to scatter, but the ships were low on reaction mass, ungainly, unmaneuverable. St. Judy's Angels dived and sniped among them, clipping a missile rack here, a solar panel there, ripping open life support bubbles and fuel tanks in slow explosions of outgassing hydrogen. The thirteen-year-old pilots died, raging with chemical-induced fury, spilled out into vacuum in tears of flash-frozen accel-

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eration gel. The attacking fleet dwindled from seven to five to three ships. But it was no abattoir of the meat; of the six dead angels that went in, only two pulled away into rendezvous orbit, laser capacitors dead, reaction mass spent. The crews ejected, unfurled their solar sails, shields of light.

Two meat ships survived. One used the last grams of his maneuvering mass to warp into a return orbit; the other routed his thruster fuel through his blip drive; headlong for St. Judy.

"He's going for a ram," Kobe said.

"Sol, get us away from him," *Capitan* Savita ordered.

"He's too close." The numbers in Sol's skull were remorseless. "Even if I cut the mass driver, he can still run life support gas through the STUs to compensate."

The command womb quivered.

"Fuck," someone swore reverently.

"Near miss," Kobe reported. "Direct hit if Sol hadn't given us gees."

"Mass driver is still with us," Sol said.

"Riley's gone," *Capitan* Savita said.

Fifty missiles were now twenty missiles but Emilio and Riley were dead, and the range was closing. Little room for maneuver; none for mistakes.

"Two hundred and fifteen seconds to ship impact," Kobe announced. The main body of missiles was dropping behind St. Judy's Comet. Ogawa and Skin, Mandelbrot set and Dalmatian spots, were fighting a rearguard as the missiles tried to reacquire their target. Olive green ripples and red tiger stripes swung round to face the meat ship. Quinsana and Elena.

Jesus Joseph Mary, but it was going to be close!

Sol wished he did not have the graphics in his head. He wished not to have to see. Better sudden annihilation, blindness and ignorance shattered by destroying light. To see, to *know,* to count the digits on the timer, was as cruel as execution. But the inner vision has no eyelids. So he watched, impotent, as Quinsana's olive green cross was pierced and shattered by a white flare from the meat ship. And he watched as Elena raked the meat with her lasers and cut it into quivering chunks, and the blast of engines destroying themselves sent the shards of ship arcing away from St. Judy's Comet. And he could only watch, and not look away, as Elena turned too slow, too little, too late, as the burst seed-pod of the environment unit tore off her thruster legs and light sail and sent her spinning end over end, crippled, destroyed.

"Elena!" he screamed in both his voices. "Elena! Oh Jesus oh God!" But he had never believed in either of them, and so they let Elena Asado go tumbling endlessly toward the beautiful galaxy clusters of Virgo.

Earth's last rage against her children expired: twenty missiles dwindled to ten, to five, to one. To none. St. Judy's Comet continued her slow climb out of the sun's gravity well, into the deep dark and the deeper cold. Its five hundred and twenty souls slept sound and ignorant as only the dead can in tombs of ice. Soon Solomon Gursky and the others would join them, and be dissolved into the receiving ice, and die for five hundred years while St. Judy's Comet made the crossing to another star.

If it were sleep, then I might forget, Solomon Gursky thought. In sleep, things changed, memories became dreams, dreams memories. In sleep, there was time, and time was change, and perhaps a chance of forgetting the vision of her, spinning outward forever, rebuilt by the same forces that had already resurrected her once, living on sunlight, unable to die. But it was not sleep to which he was going. It was death, and that was nothing any more.

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Friday

Together they watched the city burn. It was one of the ornamental cities of the plain that the Long Scanning folk built and maintained for the quadrennial eisteddfods. There was something of the flower in the small, jewel-like city, and something of the spiral, and something of the sea-wave. It would have as been as accurate to call it a vast building as a miniature city. It burned most elegantly.

The fault line ran right through the middle of it. The fissure was clean and precise—no less to be expected of the Long Scanning folk—and bisected the curvilinear architecture from top to bottom. The land still quivered to aftershocks.

It could have repaired itself. It could have doused the flames—a short in the magma tap, the man reckoned—reshaped the melted ridges and roofs, erased the scorch marks, bridged the cracks and chasms. But its tector systems were directionless, its soul withdrawn to the Heaven Tree, to join the rest of the Long Scanning people on their exodus.

The woman watched the smoke rise into the darkening sky, obscuring the great opal of Urizen.

"It doesn't have to do this," she said. Her skin spoke of sorrow mingled with puzzlement.

"They've no use for it any more," the man said. "And there's a certain beauty in destruction."

"It scares me," the woman said, and her skin pattern agreed. "I've never seen anything *end* before."

Lucky, the man thought, in a language that had come from another world.

An eddy in his weathersight: big one coming. But they were all big ones since the orbital perturbations began. Big, getting bigger. At the end, the storms would tear the forests from their roots as the atmosphere shrieked into space.

That afternoon, on their journey to the man's memories, they had come across an empty marina; drained, sand clogged, pontoons torn and tossed by tsunamis. Its crew of boats they found scattered the length of a half-hour's walk. Empty shells stogged to the waist in dune faces, masts and sails hung from trees.

The weather had been the first thing to tear free from control. The man felt a sudden tautness in the woman's body. She was seeing it to, the mid-game of the end of the world.

By the time they reached the sheltered valley that the man's aura had picked as the safest location to spend the night, the wind had risen to draw soft moans and chords from the curves and crevasses of the dead city. As their cloaks of elementals joined and sank the roots of the night shell into rock, a flock of bubbles bowled past, trembling and iridescent in the gusts. The woman caught one on her hand; the tiny creature-machine clung for a moment, feeding from her biofield. Its transparent skin raced with oil-film colors, it quaked and burst, a melting bubble of tectoplasm. The woman watched it until the elementals had completed the shelter, but the thing stayed dead.

Their love-making was both urgent and chilled under the scalloped carapace the elementals had sculpted from rock silica. *Sex and death,* the man said in the part of his head where not even his sub-vocal withspeech could overhear and transmit. An alien thought.

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She wanted to talk afterward. She liked talk after sex. Unusually, she did not ask him to tell her about how he and the other Five Hundred Fathers had built the world. Her idea of talking was him talking. Tonight she did not want to talk about the world's beginning. She wanted him to talk about its ending.

"Do you know what I hate about it? It's not that it's all going to end, all this. It's that a bubble burst in my hand, and I can't comprehend what *happened* to it. How much more our whole world?"

"There is a word for what you felt," the man interjected gently. The gyrestorm was at its height, raging over the dome of their shell. The thickness of a skin is all that is keeping the wind from stripping the flesh from my bones, he thought. But the tectors' grip on the bedrock was firm and sure. "The word is *die.*"

The woman sat with her knees pulled up, arms folded around them. Naked: the gyrestorm was blowing through her soul.

"What I hate," she said after silence, "is that I have so little time to see and feel it all before it's taken away into the cold and the dark."

She was a Green, born in the second of the short year's fast seasons: a Green of the Hidden Design people; first of the Old Red Ridge pueblo people to come into the world in eighty years. And the last.

Eight years old.

"You won't die," the man said, skin patterning in whorls of reassurance and paternal concern, like the swirling storms of great Urizen beyond the hurtling gyrestorm clouds. "You can't die. No one will die."

"I know that. No one will die, we will all be changed, or sleep with the world. But . . ."

"Is it frightening, to have to give up this body?"

She touched her forehead to her knees, shook her head.

"I don't want to lose it. I've only begun to understand what it is, this body, this world, and it's all going to be taken away from me, and all the powers that are my birthright are useless."

"There are forces beyond even nanotechnology," the man said. "It makes us masters of matter, but the fundamental dimensions—gravity, space, time—it cannot touch."

"Why?" the woman said, and to the man, who counted by older, longer years, she spoke in the voice of her terrestrial age.

"We will learn it, in time," the man said, which he knew was no answer. The woman knew it too, for she said, "While Orc is two hundred million years from the warmth of the next sun, and its atmosphere is a frozen glaze on these mountains and valleys." *Grief,* he skin said. *Rage. Loss.*

The two-thousand-year-old father touched the young woman's small, upturned breasts.

"We knew Urizen's orbit was unstable, but no one could have predicted the interaction with Ulro." Ironic: that this world named after Blake's fire daemon should be the one cast into darkness and ice, while Urizen and its surviving moons should bake two million kilometers above the surface of Los.

"Sol, you don't need to apologize to me for mistakes you made two thousand years ago," said the woman, whose name was Lenya.

"But I think I need to apologize to the world," said Sol Gursky.

Lenya's skin-speech now said *hope* shaded with *inevitability.* Her nipples were erect. Sol bent to them again as the wind from the end of the world scratched its claws over the skin of tectoplastic.

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In the morning, they continued the journey to Sol's memories. The gyrestorm had blown itself out in the Oothoon mountains. What remained of the ghost-net told Sol and Lenya that it was possible to fly that day. They suckled milch from the shell's tree of life processor, and they had sex again on the dusty earth while the elementals reconfigured the night pod into a general utility flier. For the rest of the morning, they passed over a plain across which grazebeasts and the tall, predatory angularities of the stalking Systems Maintenance people moved like ripples on a lake, drawn to the Heaven Tree planted in the navel of the world.

Both grazers and herders had been human once.

At noon, the man and the woman encountered a flyer of the Generous Sky people, flapping a silk-winged course along the thermal lines rising from the feet of the Big Chrysolite mountains. Sol with-hailed him, and they set down together in a clearing in the bitter-root forests that carpeted much of Coryphee Canton. The Generous Sky man's etiquette would normally have compelled him to disdain those ground bound who sullied the air with machines, but in these urgent times, the old ways were breaking.

Whither bound? Sol withspoke him. Static crackled in his skull. The lingering tail of the gyrestorm was throwing off electromagnetic disturbances.

Why, the Heaven Tree of course, the winged man said. He was a horrifying kite of translucent skin over stick bones and sinews. His breast was like the prow of a ship, his muscles twitched and realigned as he shifted from foot to foot, uncomfortable on the earth. A gentle breeze wafted from the nanofans grown out of the web of skin between wrists and ankles. The air smelled of strange sweat. *Whither yourselves?*

The Heaven Tree also, in time, Sol said. *But I must first recover my memories.*

Ah, a father, the Sky man said. *Whose are you?*

Hidden Design, Sol said. *I am father to this woman and her people.*

You are Solomon Gursky, the flying man withsaid. *My progenitor is Nikos Samitreides.*

I remember her well, though I have not seen her in many years. She fought bravely at the battle of St. Judy's Comet.

I am third of her lineage. Eighteen hundred years I have been on this world.

A question, if I may. Lenya's withspeech was a sudden bright interruption in the dialogue of old men. Using an honorific by which a younger adult addresses an experienced senior, she asked, *When the time comes, how will you change?*

An easy question, the Generous Sky man said, *I shall undergo the reconfiguration for life on Urizen. To me, it is little difference whether I wear the outward semblance of a man, or a jetpowered aerial manta: it is flying, and such flying! Canyons of clouds hundreds of kilometers deep; five thousand kilometer per hour winds; thermals great as continents; mad storms as big as planets! And no land, no base; to be able to fly forever free from the tyranny of Earth. The song cycles we shall compose; eddas that will carry half way around the planet on the jet streams of Urizen!* The Generous Sky man's eyes had closed in rapture. They suddenly opened. His nostrils dilated, sensing an atmospheric change intangible to the others.

Another storm is coming, bigger than the last. I advise you to take shelter within rock, for this will pluck the bitter-roots from the soil.

He spread his wings. The membranes rippled. A tiny hop, and the wind caught him and in an instant carried him up into a thermal. Sol and Lenya

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watched him glide the tops of the lifting air currents until he was lost in the deep blue sky.

For exercise and the conversation of the way, they walked that afternoon. They followed the migration track of the Rough Trading people through the tieve forests of south Coryphee and Emberwilde Cantons. Toward evening, with the gathering wind stirring the needles of the tieves to gossip, they met a man of the Ash species sitting on a chair in a small clearing among the trees. He was long and coiling, and his skin said that he was much impoverished from lack of a host. Lenya offered her arm, and though the Ash man's compatibility was more with the Buried Communication people than the Hidden Design, he gracefully accepted her heat, her morphic energy, and a few drops of blood.

"Where is your host?" Lenya asked him. A parasite, he had the languages of most nations. Hosts were best seduced by words, like lovers.

"He has gone with the herds," the Ash man said. "To the Heaven Tree. It is ended."

"And what will you do when Orc is expelled?" The rasp marks on Lenya's forearm where the parasitic man had sipped her blood were already healing over.

"I cannot live alone," the Ash man said. "I shall ask the earth to open and swallow me and kill me. I shall sleep in the earth until the warmth of a new sun awakens me to life again."

"But that will be two hundred million years," Lenya said. The Ash man looked at her with the look that said, *one year, one million years, one hundred million years, they are nothing to death.* Because she knew that the man thought her a new-hatched fool, Lenya felt compelled to look back at him as she and Sol walked away along the tieve tracks. She saw the parasite pressed belly and balls to the ground, as he would to a host. Dust spiraled up around him. He slowly sank into the earth.

Sol and Lenya did not have sex that night in the pod for the first time since Solomon the Traveler had come to the Old Red Ridge pueblo and taken the eye and heart of the brown girl dancing in the ring. That night there was the greatest earthquake yet as Orc kicked in his orbit, and even a shell of tecto-diamond seemed inadequate protection against forces that would throw a planet into interstellar space. They held each other, not speaking, until the earth grew quiet and a wave of heat passed over the carapace, which was the tieve forests of Emberwilde Canton burning.

The next morning, they morphed the pod into an ash-runner and drove through the cindered forest, until at noon they came to the edge of the Inland Sea. The tectonic trauma had sent tidal waves swamping the craggy islet on which Sol had left his memories, but the self-repair systems had used the dregs of their stored power to rebuild the damaged architecture.

As Sol was particular that they must approach his memories by sea, they ordered the ash-runner to reconfigure into a skiff. While the tectors moved molecules, a man of the Blue Mana pulled himself out of the big surf on to the red shingle. He was long and huge and sleek; his shorn turf of fur was beautifully marked. He lay panting from the exertion of heaving himself from his customary element into an alien one. Lenya addressed him familiarly—Hidden Design and the amphibious Blue Mana had been one until a millennium ago—and asked him the same question she had put to the others she had encountered on the journey.

"I am already reconfiguring my body fat into an aircraft to take me to the Heaven Tree," the Blue Mana said. "Climatic shifts permitting."

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"Is it bad in the sea?" Sol Gursky asked.

"The seas feel the changes first," the amphiman said. "Bad. Yes, most bad. I cannot bear the thought of Mother Ocean freezing clear to her beds."

"Will you go to Urizen, then?" Lenya asked, thinking that swimming must be much akin to flying.

"Why, bless you, no." The Blue Mana man's skin spelled puzzled surprise. "Why should I share any less fate than Mother Ocean? We shall both end in ice."

"The comet fleet," Sol Gursky said.

"If the Earth ship left any legacy, it is that there are many mansions in this universe where we may live. I have a fancy to visit those other settled systems that the ship told us of, experience those others ways of being human."

A hundred Orc-years had passed since the second comet-ship from Earth had entered the Los system to refuel from Urizen's rings, but the news it had carried of a home system transfigured by the nanotechnology of the ascendant dead, and of the other stars that had been reached by the newer, faster, more powerful descendants of St. Judy's Comet had ended nineteen hundred years of solitude and brought the first, lost colony of Orc into the visionary community of the star-crossing Dead. *Long before your emergence,* Sol thought, looking at the crease of Lenya's groin as she squatted on the pebbles to converse with the Blue Mana man. Emergence. A deeper, older word shadowed that expression; a word obsolete in the universe of the dead. *Birth.* No one had ever been born on Orc. No one had ever known childhood, or grown up. No one aged, no one died. They *emerged.* They stepped from the labia of the gestatory, fully formed, like gods.

Sol knew the word *child,* but realized with a shock that he could not see it any more. It was blank, void. So many things decreated in this world he had engineered!

By sea and by air. A trading of elements. Sol Gursky's skiff was completed as the Blue Mana's tectors transformed his blubber into a flying machine. Sol watched it spin into the air and recede to the south as the boat dipped through the chop toward the island of memory.

We live forever, we transform ourselves, we transform worlds, solar systems, we ship across interstellar space, we defy time and deny death, but the one thing we cannot recreate is memory, he thought. Sea birds dipped in the skiff's wake, hungry, hoping. Things cast up by motion. We cannot rebuild our memories, so we must store them, when our lives grow so full that they slop over the sides and evaporate. We Five Hundred Fathers have deep and much-emptied memories.

Sol's island was a rock slab tilted out of the equatorial sea, a handful of hard hectares. Twisted repro olives and cypresses screened a small Doric temple at the highest point. Good maintenance tectors had held it strong against the Earth storms. The classical theming now embarrassed, Sol but enchanted Lenya. She danced beneath the olive branches, under the porticoes, across the lintels. Sol saw her again as he had that first night in the Small-year-ending ring dance at Old Red Ridge. Old lust. New hurt.

In the sunlit central chamber, Lenya touched the reliefs of the life of Solomon Gursky. They would not yield their memories to her fingers, but they communicated in less sophisticated ways.

"This woman." She had stopped in front of a pale stone carving of Solomon Gursky and a tall, ascetic-faced woman with close-cropped hair standing hand in hand before a tall, ghastly tower.

"I loved her. She died in the battle of St. Judy's Comet. Big dead."

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Lost.

"So is it only because I remind you of her?"

He touched the carving. Memory bright and sharp as pain arced along his nerves; mnemotectors downloading into his aura. *Elena.* And a memory of orbit; the Long March ended, the object formerly known as St. Judy's Comet spun out into a web of beams and girders and habitation pods hurtling across the frosted red dustscapes of Orc. A web ripe with hanging fruit; entry pods ready to drop and spray the new world with life seed. Tectoforming. Among the fruit, seeds of the Five Hundred Fathers, founders of all the races of Orc. Among them, the Hidden Design and Solomon Gursky, four-armed, vacuum-proofed; avatar of life and death, clinging to a beam with the storms of Urizen behind him, touching his transforming *sur*-arms to the main memory of the mother seed. Remember her. Remember Elena. And sometime—soon, late—bring her back. Imprint her with an affinity for his scent, so that wherever she is, whoever she is with, she will come to me.

He saw himself scuttling like a guilty spider across the web as the pods dropped Orc-ward.

He saw himself in this place with Urizen's moons at syzygy, touching his hands to the carving, giving to it what it now returned to him, because he knew that as long as it was Lenya who reminded him of Elena, it could pretend to be honest. But the knowledge killed it. Lenya was more than a reminder. Lenya was Elena. Lenya was a simulacrum, empty, fake. Her life, her joy, her sorrow, her love—all deceit.

He had never expected that she would come back to him at the end of the world. They should have had thousands of years. The world gave them days.

He could not look at her as he moved from relief to relief, charging his aura with memory. He could not touch her as they waited on the shingle for the skiff to reconfigure into the flyer that would take them to the Heaven Tree. On the high point of the slab island, the Temple of Memory dissolved like rotting fungus. He did not attempt sex with her as the flyer passed over the shattered landscapes of Thel and the burned forests of Chrysoberyl as they would have, before. She did not understand. She imagined she had hurt him somehow. She had, but the blame was Sol's. He could not tell her why he had suddenly expelled himself from her warmth. He knew that he should, that he must, but he could not. He changed his skin-speech to passive, mute, and reflected that much cowardice could be learned in five hundred long-years.

They came with the evening to the Skyplain plateau from which the Heaven Tree rose, an adamantine black ray aimed at the eye of Urizen. As far as they could see, the plain twinkled with the lights and fires of vehicles and camps. Warmsight showed a million glowings: all the peoples of Orc, save those who had chosen to go into the earth, had gathered in this final redoubt. Seismic stabilizing tectors woven into the moho held steady the quakes that had shattered all other lands, but temblors of increasing violence warned that they could not endure much longer. At the end, Skyplain would crack like an egg, the Heaven Tree snap and recoil spaceward like a severed nerve.

Sol's Five Hundred Father ident pulled his flyer out of the wheel of aircraft, airships, and aerial humans circling the stalk of the Heaven Tree into a priority slot on an ascender. The flyer caught the shuttle at five kilometers: a sudden veer toward the slab sides of the space elevator, guidance matching velocities with the accelerating ascender; then the drop, heart-stopping even for immortals, and the lurch as the flyer seized the docking nipple with its claspers and clung like a tick. Then the long climb heavenward.

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Emerging from high altitude cloud, Sol saw the hard white diamond of Ulro rise above the curve of the world. Too small yet to show a disc, but this barren rock searing under heavy CO_2 exerted forces powerful enough to kick a moon into interstellar space. Looking up through the transparent canopy, he saw the Heaven Tree spread its delicate, light-studded branches hundreds of kilometers across the face of Urizen.

Sol Gursky broke his silence.

"Do you know what you'll do yet?"

"Well, since I am here, I am not going into the ground. And the ice fleet scares me. I think of centuries dead, a tector frozen in ice. It seems like death."

"It *is* death," Sol said. "Then you'll go to Urizen."

"It's a change of outward form, that's all. Another way of being human. And there'll be continuity; that's important to me."

He imagined the arrival: the ever-strengthening tug of gravity spiraling the flocks of vacuum-hardened carapaces inward; the flickers of withspeech between them, anticipation, excitement, fear as they grazed the edge of the atmosphere and felt ion flames lick their diamond skins. Lenya, falling, burning with the fires of entry as she cut a glowing trail across half a planet. The heat-shell breaking away as she unfurled her wings in the eternal shriek of wind and the ram-jets in her sterile womb kindled and roared.

"And you?" she asked. Her skin said *gentle*. Confused as much by his breaking of it as by his silence, but *gentle*.

"I have something planned," was all he said, but because that plan meant they would never meet again, he told her then what he had learned in the Temple of Memory. He tried to be kind and understanding, but it was still a bastard thing to do, and she cried in the nest in the rear of the flyer all the way out of the atmosphere, half-way to heaven. It was a bastard thing and as he watched the stars brighten beyond the canopy, he could not say why he had done it, except that it was necessary to kill some things Big Dead so that they could never come back again. She cried now, and her skin was so dark it would not speak to him, but when she flew, it would be without any lingering love or regret for a man called Solomon Gursky.

It is good to be hated, he thought, as the Heaven Tree took him up into its star-lit branches.

The launch laser was off, the reaction mass tanks were dry. Solomon Gursky fell outward from the sun. Urizen and its children were far beneath him. His course lay out of the ecliptic, flying north. His aft eyes made out a new pale ring orbiting the gas world, glowing in the low warmsight: the millions of adapted waiting in orbit for their turns to make the searing descent into a new life.

She would be with them now. He had watched her go into the seed and be taken apart by her own elementals. He had watched the seed split and expel her into space, transformed, and burn her few kilos of reaction mass on the transfer orbit to Urizen.

Only then had he felt free to undergo his own transfiguration.

Life swarm. Mighty. So nearly right, so utterly wrong. She had almost sung when she spoke of the freedom of endless flight in the clouds of Urizen, but she would never fly freer than she did now, naked to space, the galaxy before her. The freedom of Urizen was a lie, the price exacted by its gravity and pressure. She had trapped herself in atmosphere and gravity. Urizen

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was another world. The parasitic man of the Ash nation had buried himself in a world. The aquatic Blue Mana, after long sleep in ice, would only give rise to another copy of the standard model. Worlds upon worlds.

Infinite ways of being human, Solomon Gursky thought, outbound from the sun. He could feel the gentle stroke of the solar wind over the harsh dermal prickle of Urizen's magnetosphere. Sun arising. Almost time.

Many ways of being Solomon Gursky, he thought, contemplating his new body. His analogy was with a conifer. He was a redwood cone fallen from the Heaven Tree, ripe with seeds. Each seed a Solomon Gursky, a world in embryo.

The touch of the sun, that was what had opened those seed cones on that other world, long ago. Timing was too important to be left to higher cognitions. Subsystems had all the launch vectors programmed; he merely registered the growing strength of the wind from Los on his skin and felt himself begin to open. Solomon Gursky unfolded into a thousand scales. As the seeds exploded onto their preset courses, he burned to the highest orgasm of his memory before his persona downloaded into the final spore and ejected from the empty, dead carrier body.

At five hundred kilometers, the seeds unfurled their solar sails. The breaking wave of particles, with multiple gravity assists from Luvah and Enitharmon, would surf the bright flotilla up to interstellar velocities, as, at the end of the centuries—millennia—long flights, the light-sails would brake the packages at their destinations.

He did not know what his many selves would find there. He had not picked targets for their resemblance to what he was leaving behind. That would be just another trap. He sensed his brothers shutting down their cognitive centers for the big sleep, like stars going out, one by one. A handful of seeds scattered, some to wither, some to grow. Who can say what he will find, except that it will be extraordinary. Surprise me! Solomon Gursky demanded of the universe, as he fell into the darkness between suns.

Saturday

The object was one point three astronomical units on a side, and at its current 10 percent C would arrive in thirty-five hours. On his chaise lounge by the Neptune fountain, Solomon Gursky finally settled on a name for the thing. He had given much thought, over many high-hours and in many languages, most of them non-verbal, to what he should call the looming object. The name that pleased him most was in a language dead (he assumed) for thirty million years. Aea. Acronym: Alien Enigmatic Artifact. Enigmatic Alien Artifact would have been more correct but the long dead language did not handle diphthongs well.

Shadows fell over the gardens of Versailles, huge and soft as clouds. A forest was crossing the sun; a small one, little more than a copse, he thought, still finding delight in the notions that could be expressed in this dead language. He watched the spherical trees pass overhead, each a kilometer across (another archaism), enjoying the pleasurable play of shade and warmth on his skin. Sensual joys of incarnation.

As ever when the forests migrated along the Bauble's jet streams, a frenzy of siphons squabbled in their wake, voraciously feeding off the stew of bacteria and complex fullerenes.

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Solomon Gursky darkened his eyes against the hard glare of the dwarf white sun. From Versailles' perspective in the equatorial plane, the Spirit Ring was a barely discernible filigree necklace draped around its primary. Perspective. Am I the emanation of it, or is it the emanation of me?

Perspective: you worry about such things with a skeletal tetrahedron one point three astronomical units on a side fast approaching?

Of course. I am some kind of human.

"Show me," Solomon Gursky said. Sensing his intent, for Versailles was part of his intent, as everything that lived and moved within the Bauble was his intent, the disc of tectofactured baroque France began to tilt away from the sun. The sol-lilies on which Versailles and its gardens rested generated their own gravity fields; Solomon Gursky saw the tiny, bright sun seem to curve down behind the Petit Trianon, and thought, *I have reinvented sunset.* And, as the dark vault above him lit with stars, *Night is looking out from the shadow of myself.*

The stars slowed and locked over the chimneys of Versailles. Sol had hoped to be able to see the object with the unaided eye, but in low-time he had forgotten the limitations of the primeval human form. A grimace of irritation, and it was the work of moments for the tectors to reconfigure his vision. Successive magnifications clicked up until ghostly, twinkling threads of light resolved out of the star field, like the drawings of gods and myths the ancients had laid on the comfortable heavens around the Alpha Point.

Another click and the thing materialized.

Solomon Gursky's breath caught.

Midway between the micro and the macro, it was humanity's natural condition that a man standing looking out into the dark should feel dwarfed. That need to assert one's individuality to the bigness underlies all humanity's outward endeavors. But the catch in the breath is more than doubled when a *star* seems dwarfed. Through the Spirit Ring, Sol had the dimensions, the masses, the vectors. The whole of the Bauble could be easily contained within Aea's vertices. A cabalistic sign. A cosmic eye in the pyramid.

A chill contraction in the man Solomon Gursky's loins. How many million years since he had last felt his balls tighten with fear?

One point three AU's on a side. Eight sextillion tons of matter. Point one C. The thing should have heralded itself over most of the cluster. Even in low-time, he should have had more time to prepare. But there had been no warning. At once, it *was*: a fading hexagram of gravitometric disturbances on his out-system sensors. Sol had reacted at once, but in those few seconds of stretched low time that it took to conceive and create this Louis Quattorze conceit, the object had covered two-thirds of the distance from its emergence point. The high-time of created things gave him perspective.

Bear you grapes or poison? Solomon Gursky asked the thing in the sky. It had not spoken, it had remained silent through all attempts to communicate with it, but it surely bore *some* gift. The manner of its arrival had only one explanation: the thing manipulated worm-holes. None of the civilization/citizens of the Reach—most of the western hemisphere of the galaxy—had evolved a nanotechnology that could reconfigure the continuum itself.

None of the civilization/citizens of the Reach, and those federations of world-societies it fringed, had ever encountered a species that could not be sourced to the Alpha Point: that semi-legendary racial big bang from which PanHumanity had exploded into the universe.

Four hundred billion stars in this galaxy alone, Solomon Gursky thought.

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We have not seeded even half of them. The trick we play with time, slowing our perceptions until our light-speed communications seem instantaneous and the journeys of our C-fractional ships are no longer than the sea-voyages of this era I have reconstructed, seduce us into believing that the universe is as close and companionable as a lover's body, and as familiar. The five million years between the MonoHumanity of the Alpha Point and the PanHumanity of the Great Leap Outward, is a catch of breath, a contemplative pause in our conversation with ourselves. Thirty million years I have evolved the web of life in this unique system: there is abundant time and space for true aliens to have caught us up, to have already surpassed us.

Again, that tightening of the scrotum. Sol Gursky willed Versailles back toward the eye of the sun, but intellectual chill had invaded his soul. The orchestra of Lully made fete *galante* in the Hall of Mirrors for his pleasure, but the sound in his head of the destroying, rushing alien mass shrieked louder. As the solar parasol slipped between Versailles and the sun and he settled in twilight among the soft, powdered breasts of the ladies of the bed-chamber, he knew fear for the first time in thirty million years.

And he dreamed. The dream took the shape of a memory, recontextualized, reconfigured, resurrected. He dreamed that he was a starship wakened from fifty thousand years of death by the warmth of a new sun on his solar sail. He dreamed that in the vast sleep the star toward which he had aimed himself spastically novaed. It kicked off its photosphere in a nebula of radiant gas but the explosion was underpowered; the carbon/hydrogen/nitrogen/oxygen plasma was drawn by gravity into a bubble of hydrocarbons around the star. An aura. A bright bauble. In Solomon Gursky's dream, an angel floated effortlessly on tectoplastic wings hundreds of kilometers wide, banking and soaring on the chemical thermals, sowing seeds from its long, trailing fingertips. For a hundred years, the angel swam around the sun, sowing, nurturing, tending the strange shoots that grew from its fingers; things half-living, half-machine.

Asleep among the powdered breasts of court women, Sol Gursky turned and murmured the word, "evolution."

Solomon Gursky would only be a God he could believe in: the philosophers' God, creator but not sustainer, ineffable; too street-smart to poke its omnipotence into the smelly stuff of living. He saw his free-fall trees of green, the vast red rafts of the wind-reefs rippling in the solar breezes. He saw the blimps and medusas, the unresting open maws of the air-plankton feeders, the needle-thin jet-powered darts of the harpoon hunters. He saw an ecology spin itself out of gas and energy in thirty million yearless years, he saw intelligence flourish and seed itself to the stars, and fade into senescence; all in the blink of a low-time eye.

"Evolution," he muttered again and the constructed women who did not understand sleep looked at each other.

In the unfolding dream, Sol Gursky saw the Spirit Ring and the ships that came and went between the nearer systems. He heard the subaural babble of interstellar chatter, like conspirators in another room. He beheld this blur of life, evolving, transmuting, and he knew that it was very good. He said to himself, *what a wonderful world,* and feared for it.

He awoke. It was morning, as it always was in Sol's Bauble. He worked off his testosterone high and tipped Versailles darkside to look at the shadow of his nightmares. Any afterglow of libido was immediately extinguished. At eighteen light-hours distance, the astronomical dimensions assumed emo-

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tional force. A ribbon of mottled blue-green ran down the inner surface of each of Aea's six legs. Amplified vision resolved forested continents and oceans beneath fractal cloud curls. Each ribbon-world was the width of two Alpha Points peeled and ironed, stretched one point three astronomical units long. Sol Gursky was glad that this incarnation could not instantly access how many million planets' surfaces that equaled; how many hundreds of thousands of years it would take to walk from one vertex to another, and then to find, dumbfounded like the ancient conquistadors beholding a new ocean, another millennia-deep world in front of him.

Solomon Gursky turned Versailles toward the sun. He squinted through the haze of the Bauble for the delicate strands of the Spirit Ring. A beat of his mind shifted his perceptions back into low-time, the only time frame in which he could withspeak to the Spirit Ring, his originating self. Self-reference, self-confession.

No communication?

None, spoke the Spirit Ring.

Is it alien? Should I be afraid? Should I destroy the Bauble?

In another time, such schizophrenia would have been disease.

Can it annihilate you?

In answer, Sol envisioned the great tetrahedron at the bracelet of information tectors orbiting the sun.

Then that is nothing, the Spirit Ring withsaid. *And nothing is nothing to fear. Can it cause you pain or humiliation, or anguish to body or soul?*

Again, Sol withspoke an image, of cloud-shaded lands raised over each other like the pillars of Yahweh, emotionally shaded to suggest amazement that such an investment of matter and thought should have been created purely to humiliate Solomon Gursky.

Then that too is settled. And whether it is alien, can it be any more alien to you than you yourself are to what you once were? All PanHumanity is alien to itself; therefore, we have nothing to fear. We shall welcome our visitor, we have many questions for it.

Not the least being, *why me?* Solomon Gursky thought privately, silently, in the dome of his own skull. He shifted out of the low-time of the Spirit Ring to find that in those few subjective moments of communication Aea had passed the threshold of the Bauble. The leading edge of the tetrahedron was three hours away. An hour and half beyond that was the hub of Aea.

"Since it seems that we can neither prevent nor hasten the object's arrival, nor guess its purposes until it deigns to communicate with us," Sol Gursky told his women of the bedchamber, "therefore let us party." Which they did, before the Mirror Pond, as Lully's orchestra played and capons roasted over charcoal pits, and torch-lit harlequins capered and fought out the ancient loves and comedies, and women splashed naked in the Triton Fountain, and fantastic lands one hundred million kilometers long slid past them. Aea advanced until Sol's star was at its center, then stopped. Abruptly, instantly. A small gravitational shiver troubled Versailles, the orchestra missed a note, a juggler dropped a club, the water in the fountain wavered, women shrieked, a capon fell from a spit into the fire. That was all. The control of mass, momentum, and gravity was absolute.

The orchestra leader looked at Solomon Gursky, staff raised to resume the beat. Sol Gursky did not raise the handkerchief. The closest section of Aea was fifteen degrees east, two hundred thousand kilometers out. To Sol Gursky, it was two fingers of sun-lit land, tapering infinitesimally at either

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end to threads of light. He looked up at the apex, two other brilliant threads spun down beneath the horizon, one behind the Petit Trianon, the other below the roof of the Chapel Royal.

The conductor was still waiting. Instruments pressed to faces, the musicians watched for the cue.

Peacocks shrieked on the lawn. Sol Gursky remembered how irritating the voices of peacocks were, and wished he had not recreated them.

Sol Gursky waved the handkerchief.

A column of white light blazed out of the gravel walk at the top of the steps. The air was a seethe of glowing motes.

An attempt is being made to communicate with us, the Spirit Ring said in a flicker of low-time. Sol Gursky felt information from the Ring crammed into his cerebral cortex: the beam originated from a source of the rim section of the closest section of the artifact. The tectors that created and sustained the Bauble were being reprogrammed. At hyper-velocities, they were manufacturing a construct out of the Earth of Versailles.

The pillar of light dissipated. A human figure stood at the top of the steps: a white Alpha Point male, dressed in Louis XIV style. The man descended the steps into the light of the flambeau bearers. Sol Gursky looked on his face.

Sol Gursky burst into laughter.

"You are very welcome," he said to his doppelgänger. "Will you join us? The capons will be ready shortly, we can bring you the finest wines available to humanity, and I'm sure the waters of the fountains would be most refreshing to one who has traveled so long and so far."

"Thank you," Solomon Gursky said in Solomon Gursky's voice. "It's good to find a hospitable reception after a strange journey."

Sol Gursky nodded to the conductor, who raised his staff, and the *petite bande* resumed their interrupted gavotte.

Later, on a stone bench by the lake, Sol Gursky said to his doppel, "Your politeness is appreciated, but it really wasn't necessary for you to don my shape. All this is as much a construction as you are."

"Why do you think it's a politeness?" the construct said.

"Why should you choose to wear the shape of Solomon Gursky?"

"Why should I not, if it is my *own* shape?"

Nereids splashed in the pool, breaking the long reflections of Aea.

"I often wonder how far I reach," Sol said.

"Further than you can imagine," Sol II answered. The playing Nereids dived; ripples spread across the pond. The visitor watched the wavelets lap against the stone rim and interfere with each other. "There are others out there, others we never imagined, moving through the dark, very slowly, very silently. I think they may be older than us. They are different from us, very different, and we have now come to the complex plane where our expansions meet."

"There was a strong probability that they—you—were an alien artifact."

"I am, and I'm not. I am fully Solomon Gursky, and fully Other. That's the purpose behind this artifact; that we have reached a point where we either compete, destructively, or join."

"Seemed a long way to come just for a family reunion," Solomon Gursky joked. He saw that the doppel laughed, and how it laughed, and why it laughed. He got up from the stone rim of the Nereid pool. "Come with me, talk to me, we have thirty million years of catching up."

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His brother fell in at his side as they walked away from the still water toward the Aea-lit woods.

His story: he had fallen longer than any other seed cast off by the death of Orc. Eight hundred thousand years between wakings, and as he felt the warmth of a new sun seduce his tector systems to the work of transformation, his sensors reported that his was not the sole presence in the system. The brown dwarf toward which he decelerated was being dismantled and converted into an englobement of space habitats.

"Their technology is similar to ours—I think it must be a universal inevitability—but they broke the ties that still bind us to planets long ago," Sol II said. The woods of Versailles were momentarily darkened as a sky-reef eclipsed Aea. "This is why I think they are older than us: I have never seen their original form—they have no tie to it, we still do; I suspect they no longer remember it. It wasn't until we fully merged that I was certain that they were not another variant of humanity."

A hand-cranked wooden carousel stood in a small clearing. The faces of the painted horses were fierce and pathetic in the sky light. Wooden rings hung from iron gibbets around the rim of the carousel; the wooden lances with which the knights hooked down their favors had been gathered in and locked in a closet in the middle of the merry-go-round.

"We endure forever, we engender races, nations, whole ecologies, but we are sterile," the second Sol said. "We inbreed with ourselves. There is no union of disparities, no coming together, no hybrid energy. With the Others, it was sex. Intercourse. Out of the fusion of ideas and visions and capabilities, we birthed what you see."

The first Sol Gursky laid his hand on the neck of a painted horse. The carousel was well balanced, the slightest pressure set it turning.

"Why are you here, Sol?" he asked.

"We shared technologies, we learned how to engineer on the quantum level so that field effects can be applied on macroscopic scales. Manipulation of gravity and inertia; non-locality; we can engineer and control quantum worm-holes."

"Why have you come, Sol?"

"Engineering of alternative time streams; designing and colonizing multiple worlds, hyperspace and hyperdimensional processors. There are more universes than this one for us to explore."

The wooden horse stopped.

"What do you want, Sol?"

"Join us," said the other Solomon Gursky. "You always had the vision—*we* always had the vision, we Solomon Gurskys. Humanity expanding into every possible ecological niche."

"Absorption," Solomon Gursky said. "Assimilation."

"Unity," said his brother. "Marriage. *Love*. Nothing is lost, everything is gained. All you have created here will be stored; that is what I am, a machine for remembering. It's not annihilation, Sol, don't fear it; it's not your self-hood dissolving into some identityless collective. It *is* you, plus. It is life, cubed. And ultimately, we are one seed, you and I, unnaturally separated. We gain each other."

If nothing is lost, then you remember what I am remembering, Solomon Gursky I thought. I am remembering a face forgotten for over thirty million years: Rabbi Bertelsmann. A fat, fair, pleasant face. he is talking to his Bar Mitzvah class about God and masturbation. He is saying that God con-

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demned Onan not for the pleasure of his vice, but because he spilled his seed on the ground. He was fruitless, sterile. He kept the gift of life to himself. And I am now God in my own world, and Rabbi B is smiling and saying, masturbation, Sol. It is all just one big jerk-off, seed spilled on the ground, engendering nothing. Pure recreation; recreating yourself endlessly into the future.

He looked at his twin.

"Rabbi Bertelsmann?" Sol Gursky II said.

"Yes," Sol Gursky I said; then, emphatically, certainly, "Yes!"

Solomon Gursky II's smile dissolved into motes of light.

All at once, the outer edges of the great tetrahedron kindled with ten million points of diamond light. Sol watched the white beams sweep through the Bauble and understood what it meant, that they could manipulate time and space. Even at light-speed, Aea was too huge for such simultaneity.

Air trees, sky reefs, harpooners, siphons, blimps, zeps, cloud sharks: everything touched by the moving beams was analyzed, comprehended, stored. Recording angels, Sol Gursky thought, as the silver knives dissected his world. He saw the Spirit Ring unravel like coils of DNA as a billion days of Solomon Gursky flooded up the ladder of light into Aea. The center no longer held; the gravitational forces the Spirit Ring had controlled, that had maintained the ecosphere of the Bauble, were failing. Sol's world was dying. He felt no pain, no sorrow, no regret, but rather a savage joy, an urgent desire to be up and on and out, to be free of this great weight of life and gravity. It is not dying, he thought. Nothing ever dies.

He looked up. An angel-beam scored a searing arc across the rooftops of Versailles. He opened his arms to it and was taken apart by the light. Everything is held and recreated in the mind of God. Unremembered by the mind of Solomon Gursky, Versailles disintegrated into swarms of free-flying tectors.

The end came quickly. The angels reached into the photosphere of the star and the complex quasi-information machines that worked there. The sun grew restless, woken from its long quietude. The Spirit Ring collapsed. Fragments spun end-over-end through the Bauble, tearing spectacularly through the dying sky-reefs, shattering cloud forests, blazing in brief glory in funeral orbits around the swelling sun.

For the sun was dying. Plagues of sunspots pocked its chromosphere; solar storms raced from pole to pole in million-kilometer tsunamis. Panicked hunter packs kindled and died in the solar protuberances hurled off as the photosphere prominenced to the very edge of the Bauble. The sun bulged and swelled like a painfully infected pregnancy: Aea was manipulating fundamental forces, loosening the bonds of gravity that held the system together. At the end, it would require all the energies of star-death to power the quantum worm-hole processors.

The star was now a screaming saucer of gas. No living thing remained in the Bauble. All was held in the mind of Aea.

The star burst. The energies of the nova should have boiled Aea's oceans, seared its lands from their beds. It should have twisted and snapped the long, thin arms like yarrow stalks, sent the artifact tumbling like a smashed Fabergé egg through space. But Aea had woven its defenses strong: gravity fields warped the electromagnetic radiation around the fragile terrains; the quantum processors devoured the storm of charged particles, and reconfigured space, time, mass.

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The four corners of Aea burned brighter than the dying sun for an instant. And it was gone; under space and time, to worlds and adventures and experiences beyond all saying.

Sunday

Toward the end of the universe, Solomon Gursky's thoughts turned increasingly to lost loves.

Had it been entirely physical, Ua would have been the largest object in the universe. Only its fronds, the twenty-light-year-long stalactites that grew into the ylem, tapping the energies of decreation, had any material element. Most of Ua, ninety-nine followed by several volumes of decimal nines percent of its structure, was folded though eleven-space. It was the largest object in the universe in that its fifth and sixth dimensional forms contained the inchoate energy flux known as the universe. Its higher dimensions contained only itself, several times over. It was infundibular. It was vast, it contained multitudes.

PanLife, that amorphous, multi-faceted cosmic infection of human, transhuman, non-human, PanHuman sentiences, had filled the universe long before the continuum reached its elastic limit and began to contract under the weight of dark matter and heavy neutrinos. Femtotech, hand in hand with the worm-hole jump, spread PanLife across the galactic super-clusters in a blink of God's eye.

There was no humanity, no alien. No us, no other. There was only *life*. The dead had become life. Life had become Ua: Pan-spermia. Ua woke to consciousness, and like Alexander the Great, despaired when it had no new worlds to conquer. The universe had grown old in Ua's gestation; it had withered, it contracted, it drew in on itself. The red shift of galaxies had turned blue. And Ua, which owned the attributes, abilities, ambitions, everything except the name and pettinesses of a god, found itself, like an old, long-dead God from a world slagged by its expanding sun millions of years ago, in the business of resurrection.

The galaxies raced together, gravitational forces tearing them into loops and whorls of severed stars. The massive black holes at the galactic centers, fueled by billennia of star-death, coalesced and merged into monstrosities that swallowed globular clusters whole, that shredded galaxies and drew them spiraling inward until, at the edge of the Schwartzchild radii, they radiated super-hard gamma. Long since woven into higher dimensions, Ua fed from the colossal power of the accretion discs, recording in multi-dimensional matrices the lives of the trillions of sentient organisms fleeing up its fronds from the destruction. All things are held in the mind of God: at the end, when the universal background radiation rose asymptotically to the energy density of the first seconds of the Big Bang, it would deliver enough power for the femtoprocessors woven through the Eleven Heavens to rebuild the universe, entire. A new heaven, and a new Earth.

In the trans-temporal matrices of Ua, PanLife flowed across dimensions, dripping from the tips of the fronds into bodies sculpted to thrive in the plasma flux of ragnarok. Tourists to the end of the world: most wore the shapes of winged creatures of fire, thousands of kilometers across. Starbirds. Firebirds. But the being formerly known as Solomon Gursky had chosen a different form, an archaism from that long-vanished planet. It pleased him to be a

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thousand-kilometer, diamond-skinned Statue of Liberty, torch out-held, beaming a way through the torrents of star-stuff. Sol Gursky flashed between flocks of glowing soul-birds clustering in the information-rich environment around the frond-tips. He felt their curiosity, their appreciation, their consternation at his non-conformity; none got the joke.

Lost loves. So many lives, so many worlds, so many shapes and bodies, so many loves. They had been wrong, those ones back at the start, who had said that love did not survive death. He had been wrong. It was eternity that killed love. Love was a thing measured by human lifetimes. Immortality gave it time enough, and space, to change, to become things more than love, or dangerously other. None endured. None would endure. Immortality was endless change.

Toward the end of the universe, Solomon Gursky realized that what made love live forever was death.

All things were held in Ua, awaiting resurrection when time, space, and energy fused and ceased to be. Most painful among Sol's stored memories was the remembrance of a red-yellow tiger-striped angel fighter, half-crucified, crippled, tumbling toward the star clouds of Virgo. Sol had searched the trillions of souls roosting in Ua for Elena; failing, he hunted for any that might have touched her, hold some memory of her. He found none. As the universe contracted—as fast and inevitable as a long-forgotten season in the ultra-low time of Ua—Sol Gursky entertained hopes that the universal gathering would draw her in. Cruel truths pecked at his perceptions: calculations of molecular deliquescence, abrasion by interstellar dust clouds, probabilities of stellar impacts, the slow terminal whine of proton decay; any of which denied that Elena could still exist. Sol refused those truths. A thousand-kilometer Statue of Liberty searched the dwindling cosmos for one glimpse of red-yellow tiger-stripes embedded in a feather of fractal plasma flame.

And now a glow of recognition had impinged on his senses laced through the Eleven Heavens.

Her. It had to be her.

Sol Gursky flew to an eye of gravitational stability in the flux and activated the worm-hole nodes seeded throughout his diamond skin. Space opened and folded like an exercise in origami. Sol Gursky went elsewhere.

The starbird grazed the energy-dense borderlands of the central accretion disc. It was immense. Sol's Statue of Liberty was a frond of one of its thousand flight feathers, but it sensed him, welcomed him, folded its wings around him as it drew him to the shifting pattern of sun-spots that was the soul of its being.

He knew these patterns. He remembered these emotional flavors. He recalled this love. He tried to perceive if it were her, her journeys, her trials, her experiences, her agonies, her vastenings.

Would she forgive him?

The soul spots opened. Solomon Gursky was drawn inside. Clouds of tectors interpenetrated, exchanging, sharing, recording. Intellectual intercourse.

He entered her adventures among alien species five times older than Pan-Humanity, an alliance of wills and powers waking a galaxy to life. In an earlier incarnation, he walked the worlds she had become, passed through the dynasties and races and species she had propagated. He made with her the long crossings between stars and clusters, clusters and galaxies. Earlier still, and he swam with her through the cloud canyons of a gas giant world called

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Urizen, and when that world was hugged too warmly by its sun, changed mode with her, embarked with her on the search for new places to live.

In the nakedness of their communion, there was no hiding Sol Gursky's despair.

I'm sorry Sol, the starbird once known as Lenya communicated.

You have nothing to sorry be for, Solomon Gursky said.

I'm sorry that I'm not her. I'm sorry I never was her.

I made you to be a lover, Sol withspoke. *But you became something older, something richer, something we have lost.*

A daughter, Lenya said.

Unmeasurable time passed in the blue shift at the end of the universe. Then Lenya asked, *Where will you go?*

Finding her is the only unfinished business I have left, Sol said.

Yes, the starbird communed. *But we will not meet again.*

No, not in this universe.

Nor any other. And that is death, eternal separation.

My unending regret, Sol Gursky withspoke as Lenya opened her heart and the clouds of tectors separated. *Good bye, daughter.*

The Statue of Liberty disengaged from the body of the starbird. Lenya's quantum processors created a pool of gravitational calm in the maelstrom. Sol Gursky manipulated space and time and disappeared.

He re-entered the continuum as close as he dared to a frond. A pulse of his mind brought him within reach of its dendrites. As they drew him in, another throb of thought dissolved the Statue of Liberty joke into the plasma flux. Solomon Gursky howled up the dendrite, through the frond, into the soul matrix of Ua. There he carved a niche in the eleventh and highest heaven, and from deep under time, watched the universe end.

As he had expected, it ended in fire and light and glory. He saw space and time curve inward beyond the limit of the Planck dimensions; he felt the energy gradients climb toward infinity as the universe approached the zero-point from which it had spontaneously emerged. He felt the universal processors sown through eleven dimensions seize that energy before it faded, and put it to work. It was a surge, a spurt of power and passion, like the memory of orgasm buried deep in the chain of memory that was the days of Solomon Gursky. Light to power, power to memory, memory to flesh. Ua's stored memories, the history of every particle in the former universe, were woven into being. Smart superstrings rolled balls of wrapped eleven-space like sacred scarabs wheeling dung. Space, time, mass, energy unraveled; as the universe died in a quantum fluctuation, it was reborn in primal light.

To Solomon Gursky, waiting in low-time where aeons were breaths, it seemed like creation by *fiat.* A brief, bright light, and galaxies, clusters, stars, turned whole-formed and living within his contemplation. Already personas were swarming out of Ua's honeycomb cells into time and incarnation, but what had been reborn was not a universe, but universes. The re-resurrected were not condemned to blindly recapitulate their former lives. Each choice and action that diverged from the original pattern splintered off a separate universe. Sol and Lenya had spoken truly when they had said they would never meet again. Sol's point of entry into the new polyverse was a thousand years before Lenya's; the universe he intended to create would never intersect with hers.

The elder races had already fanned the polyverse into a *mille feuille* of alternatives: Sol carefully tracked his own timeline through the blur of possi-

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bilities as the first humans dropped back into their planet's past. Stars moving into remembered constellations warned Sol that his emergence was only a few hundreds of thousands of years off. He moved down through dimensional matrices, at each level drawing closer to the time flow of his particular universe.

Solomon Gursky hung over the spinning planet. Civilizations rose and decayed, empires conquered and crumbled. New technologies, new continents, new nations were discovered. All the time, alternative Earths fluttered away like torn-off calendar pages on the wind as the dead created new universes to colonize. Close now. Mere moments. Sol dropped into meat time, and Ua expelled him like a drop of milk from a swollen breast.

Solomon Gursky fell. Illusions and anticipations accompanied his return to flesh. Imaginings of light; a contrail angel scoring the nightward half of the planet on its flight across a dark ocean to a shore, to a mountain, to a valley, to a glow of campfire among night-blooming cacti. Longing. Desire. Fear. Gain, and loss. God's trade: to attain the heart's desire, you must give up everything you are. Even the memory.

In the quilted bag by the fire in the sheltered valley under the perfume of the cactus flowers, the man called Solomon Gursky woke with a sudden chill start. It was night. It was dark. Desert stars had half-completed their compass above him. The stone-circled fire had burned down to clinking red glow: the night perfume witched him. Moths padded softly through the air, seeking nectar.

Sol Gursky drank five senses full of his world.

I am alive, he thought. I am here. Again.

Ur-light burned in his hind-brain; memories of Ua, a power like omnipotence. Memories of a life that out-lived its native universe. Worlds, suns, shapes. Flashes, moments. Too heavy, too rich for this small knot of brain to hold. Too bright: no one can live with the memory of having been a god. It would fade—it was fading already. All he need hold—all he must hold—was what he needed to prevent this universe from following its predestined course.

The realization that eyes were watching him was a shock. Elena sat on the edge of the fire shadow, knees folded to chin, arms folded over shins, looking at him. Sol had the feeling that she had been looking at him without him knowing for a long time, and the surprise, the uneasiness of knowing you are under the eyes of another, tempered both the still-new lust he felt for her, and his fading memories of aeons-old love.

Déjà vu. But this moment had never happened before. The divergence was beginning.

"Can't sleep?" she asked.

"I had the strangest dream."

"Tell me." The thing between them was at the stage where they searched each other's dreams for allusions to their love.

"I dreamed that the world ended," Sol Gursky said. "It ended in light, and the light was like the light in a movie projector, that carried the image of the world and everything in it, and so the world was created again, as it had been before."

As he spoke, the words became true. It was a dream now. This life, this body, these memories, were the solid and faithful.

"Like a Tipler machine," Elena said. "The idea that the energy released by the Big Crunch could power some kind of holographic recreation of the entire

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universe. I suppose with an advanced enough nanotechnology, you could rebuild the universe, an exact copy, atom for atom."

Chill dread struck in Sol's belly. She could not know, surely. She must not know.

"What would be the point of doing it exactly the same all over again?"

"Yeah." Elena rested her cheek on her knee. "But the question is, is *this* our first time in the world, or have we been here many times before, each a little bit different? Is this the first universe, or do we only *think* that it is?"

Sol Gursky looked into the embers, then to the stars.

"The Nez Perce Nation believes that the world ended on the third day and that what we are living in are the dreams of the second night." Memories, fading like summer meteors high overhead, told Sol that he had said this once before, in their future, after his first death. He said it now in the hope that that future would not come to pass. Everything that was different, every tiny detail, pushed this universe away from the one in which he must lose her.

A vee of tiger-striped tectoplastic tumbled end over end forever toward Virgo.

He blinked the ghost away. It faded like all the others. They were going more quickly than he had thought. He would have to make sure of it now, before that memory too dissolved. He struggled out of the terrain bag, went over to the bike lying exhausted on the ground. By the light of a detached bicycle lamp, he checked the gear train.

"What are you doing?" Elena asked from the fireside. The thing between them was still new, but Sol remembered that tone in her voice, that soft inquiry, from another lifetime.

"Looking at the gears. Something didn't feel right about them today. They didn't feel solid."

"You didn't mention it earlier."

No, Sol thought. I didn't know about it. Not then. The gear teeth grinned flashlight back at him.

"We've been giving them a pretty hard riding. I read in one of the biking mags that you can get metal fatigue. Gear train shears right through, just like that."

"On brand-new, two thousand dollar bikes?"

"On brand-new two thousand dollar bikes."

"So what do you think you can *do* about it at one o'clock in the morning in the middle of the Sonora Desert?"

Again, that come-hither tone. Just a moment more, Elena. One last thing, and then it will be safe.

"It just didn't sit right. I don't want to take it up over any more mountains until I've had it checked out. You get a gear-shear up there . . ."

"So, what are you saying, irritating man?"

"I'm not happy about going over Blood of Christ Mountain tomorrow."

"Yeah. Sure. Fine."

"Maybe we should go out west, head for the coast. It's whale season, I always wanted to see whales. And there's real good seafood. There's this cantina where they have fifty ways of serving iguana."

"Whales. Iguanas. Fine. Whatever you want. Now, since you're so wide-awake, you can just get your ass right *over* here, Sol Gursky!"

She was standing up, and Sol saw and felt what she had been concealing by the way she had sat. She wearing only a cut-off MTB shirt. Safe, he

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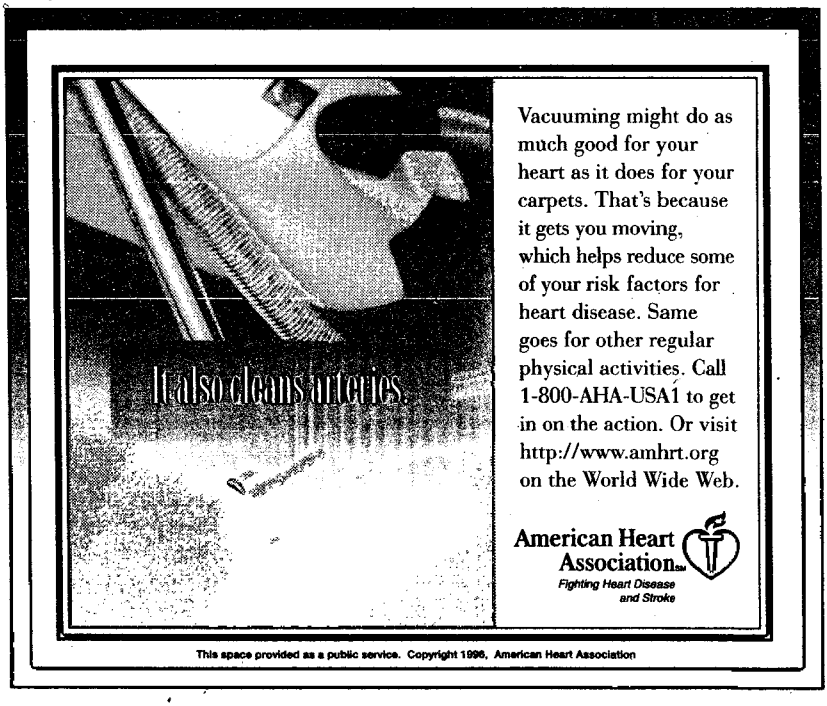
thought, as he seized her and took her down laughing and yelling onto the camping mat. Even as he thought it, he forgot it, and all those Elenas who would not now be: conspirator, crop-haired freedom fighter, four-armed space-angel. Gone.

The stars moved in their ordained arcs. The moths and cactus forest bats drifted through the soft dark air, and the eyes of the things that hunted them glittered in the firelight.

Sol and Elena were still sore and laughing when the cactus flowers closed with dawn. They ate their breakfast and packed their small camp, and were in the saddle and on the trail before the sun was full over the shoulder of Blood of Christ Mountain. They took the western trail, away from the hills, and the town called Redención hidden among them with its freight of resurrected grief. They rode the long trail that led down to the ocean, and it was bright, clear endless Monday morning. ●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ON BOOKS

Norman Spinrad

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Whether the condition will become permanent remains to be seen, but this is clearly an era in which traditional science fiction, which is to say genre SF and the SF genre, is imploding. In terms of sales, numbers of titles published, and, it might be argued, even literary interest, the former fantasy tail has long since come to wag the former science fiction dog.

Moreover, the science fiction segment of the "SF genre" is now commercially dominated by media tie-in novels and their franchised universe clones. And the fantasy segment of the genre is commercially dominated by formulaic pseudo-Arthurian novel series (aka "High Fantasy"), which, interestingly enough, are basically the formal and psychological template for the endless *Star Wars* novels and films themselves.

Under this brutal commercial pressure, the SF genre seems to be in the process of losing the central core that has more or less served as its armature for nearly three quarters of a century of evolutionary and occasionally devolutionary changes.

For while literary movements have come and gone and left their influences, what has long given this inherently experimental literature its commercial viability, and contrawise given this commercial genre a literary dimension, has been the sincere down-the-middle stuff.

Namely science fiction and fantasy written in serviceable and accessible transparent prose, more or less conventionally structured, and featuring protagonists with whom the ordinary reader can readily identify on a psychological level, but informed by serious speculative intent and the popular non-dogmatic transcendentalism that came to be known as sense of wonder.

Let us pause to ponder just how unique this presently endangered species of popular literature was and is, how culturally precious that which is in danger of being lost.

Here was a commercial genre born in the old adventure pulp magazines of the first third of the twentieth century aimed primarily at adolescent males, which, over the decades, in fits and starts, evolved into an intellectually credible, scientifically germane, transcendental literature without losing its popular base.

Of what other literature in the history of the western world can this truly be said?

Generations of adolescent readers grew up and through this sort of lit-

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erarily accessible but intellectually challenging and spiritually enlivening down-the-middle genre SF; educated, inspired, awakened in the process, many of them.

Enough, at any rate, to make the more politically, literarily, and psychologically sophisticated SF that began to be written in the 1950s at least marginally commercially viable. Enough to rescue the formally and stylistically experimental speculative fiction of the 1960s and 1970s from the hermetic groves of academe. Enough to support the cyberpunk fiction that grew out of the dialectic between the experimentalism and streetwise radicalism of the New Wave and the technophilia of hard SF. Enough, in the end, to allow sincere and talented writers to continue to write SF into their literary maturity. Nothing like it in the history of the western world.

True, this sort of stuff was never the cutting edge of the speculative and literary envelope, but without it the stuff that was probably would've ended up published in precious little literary magazines with circulations of a few thousand and small editions by academic presses and none of the people writing it could ever have even contemplated giving up their day jobs.

It is this sort of SF that presently seems to be in the process of expiring, or rather in the process of being exterminated and replaced by the media tie-in novels and the like, which, instead of leading readers upward and onward, are designed to lead them into buying more of the same cross-marketed brand name product.

Is this then the end of sincere, intellectually demanding, literarily interesting, spiritually alive SF?

I hope not.

I dare to think not.

It just may be the beginning of the end for the mass readership for such literature, and that would create a cultural void for which our species would pay very dearly indeed in the future.

Indeed—in terms of the stagnation of the American and Russian space programs, the waning public interest in cutting edge science and its replacement by millenarianist paranoid UFO cults promulgated by such as *The X-Files* and its clones, and the lack of any credible visionary hope for a non-dystopian future—for which it may be paying already.

But in purely non-commercial, non-political, non-cultural and strictly literary terms, even as the center crumbles, there are still interesting things happening at the edges, as there have always been, and probably always will be.

Paul Di Filippo, for example, as fiction writer and critic, has always been an inhabitant of the edge of the envelope of speculative fiction; in his case, the interface between science fiction and what might for want of a better term be called the American avant-garde underground, the latter-day literary inheritors of William Burroughs and the Beats, more or less.

As a critic, Di Filippo has sought to bring the literary goings on in the cutting edge small press and radical literary magazines to the attention of the science fiction audience. As one of the consistently interesting writers of short speculative fiction of the past decade or so, Di Filippo has continued, in the tradition of Michael Moorcock's *New Worlds* and its esthetic successor *Interzone,* to apply the full panoply of cutting edge literary technique to the material of science fiction.

That much one has come to appreciate and expect from Paul Di Filippo, but *Ribofunk* is something else again.

Ribofunk is a collection of mostly previously published short stories that either by previous design or ret-

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rospective fix-up cohere into something like a novel. Formally and commercially speaking, there's nothing new about this. Indeed it's rather retro, harkening back to the innocent days when an SF series generally referred to science fiction "novels" cobbled together out of novelettes published in magazines or contrawise when novels were broken up into novelettes for magazine publication in order to make economic ends almost meet.

Of course very few SF writers in those days were capable of Di Filippo's stylistic snap and dash. Nor did many of those old short story collections disguised as novels—including Ray Bradbury's *Martian Chronicles*—hold together as unified works this well. And even when they did, they certainly didn't do it this way, as a series of stylistically different parts actually evolving through the book as an expression of the thematic material.

Okay, that much formal and stylistic sophistication one might expect from a writer like Paul Di Filippo—not that there are many writers like Di Filippo—but that the thematic material around which *Ribofunk* so successfully coheres is rather rigorous radical scientific speculation is something of a surprise.

Ribofunk, the title, is obviously a deliberate take on "cyberpunk," the Movement, and the blurb makes at least a tongue-in-cheek pass at proclaiming "Ribofunk" its successor.

Tongue-in-cheek?

Maybe, since this is where Di Filippo's rhetorical tongue is usually to be found. But on the other hand . . .

The cyberpunk future is one in which computer technology reigns and the street finds its uses therefor. The Ribofunk future is one in which genetic engineering and molecular biology reign and the streetlife unsurprisingly finds its uses for designer genes, bods, and drugs.

But while Gibson and Co. let stylistic tour-de-force and outlaw sensibility compensate for (and/or mask) a certain shaky grounding in real computer technology, Di Filippo herein applies the same outlaw sensibility and even greater stylistic razzmatazz to a truly convincing display of scientific credibility.

Yes, folks, underpinning all the flash and dash, the drug trips and the irony, and the general brainbending, *Ribofunk* is, unexpectedly, hard science fiction in psychedelic furs. And as good on that level as it is on a literary level.

Could *Ribofunk* really spawn the next literary movement in speculative fiction?

¿Quien sabe?

SF could certainly use some kind of new literary movement at the moment, and especially one based on a new area of scientific speculation that opens literary horizons, as computer technology did via the cyberpunks.

The closest current potential successor as such an opener of the way is "nanotechnology," a pseudoscientific transmogrification of all-purpose magic for literary purposes that has thus far produced a few interesting works and quite a bit of bullshit.

It strikes me that Di Filippo's transformational biology, being much more scientifically credible and rooted than nanotech and closer to home (namely our bodies and our consciousnesses and nothing virtual about it) than cyberspace at least has such a potential.

Be that as it may, that a writer like Di Filippo, generally regarded as an avant-garde literary stylist, could open such a potential creative window via old-fashioned rigorous scientific speculation applied in new ways to unexpected material certainly demonstrates not only that there's still life out there on the cutting edge but that the edge, as is its wont, is

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frequently not exactly found where you expect it to be.

Nor is avidly reading a novel with a title like *The Tooth Fairy* exactly where I would ever have expected to find myself being.

The Tooth Fairy?

What the hell kind of title is that?

Quite a cunning one, obviously, since I could hardly put aside the book without at least perusing it to find out what sort of thing could possibly be inside.

The opening line:

"Clive was on the far side of the green pond, torturing a king-crested newt."

Huh?

And then the name of the author struck me—Graham Joyce.

Graham Joyce's previous novel, *Requiem,* was a book that I had somehow never gotten around to reviewing but which had greatly impressed me—and now it all came flooding back.

Requiem is a fantasy novel set in modern Jerusalem, a love story of sorts, but more strongly a dark vision quest, that of one Tom Webster who travels there to see an old love after the death of his wife.

Again, not usually the sort of thing I would find myself reading, but the setting piqued my initial interest, as did the setting of Dan Simmons's *Song of Kali,* also not ordinarily my sort of stuff. How often do you come across a fantasy novel set in contemporary Jerusalem or Calcutta? Not very, and I have a certain fascination with both venues, to neither of which I've ever been.

That was enough to get me to open *Requiem,* and Joyce's writing did the rest. Not that Graham Joyce's prose style has the cutting edge dazzle of a writer like Di Filippo, being more or less conventional and transparent, but the sensibility it expresses immediately impresses you as adult, sophisticated, deep. A voice with a story to tell that will not be trivial.

In the case of *Requiem,* the story is Webster's magical mystery tour of his own psyche and Jerusalem as the two interpenetrate and entwine, as the city draws him into its reality.

Or rather realities, for this *is* Jerusalem, which recently celebrated (if that is the word) its official 3000th anniversary, and which is probably older than that. The holy city to three major world religions, which have fought over it, in it, and through it, for a couple of millennia, politically and culturally fragmented, volatile, dangerous, steeped in several contradictory mystical traditions, and much, much more.

Not exactly the place to go to get your confused head together, as Webster discovers, but in the end, perhaps, an appropriate arena for a wrestling match with demons and spirits—those of the city and those of one's own inner space, though it's not easy to tell which is which even with a Biblical scorecard.

So okay, I'll try another novel by Graham Joyce, even if it *is* called *The Tooth Fairy,* if only to find out why a serious writer like Joyce would slap a camp title like that on a book.

The answer, surprisingly enough, is because a central character and mythic archetype of the novel, the mutating spirit guide, bête noire, invisible companion, sexual succubus, who haunts Sam, the dominant viewpoint character, from childhood throug h adolescence is indeed . . . the Tooth Fairy.

And the novel is by no means light-hearted comedy.

What it is is the story of the growing up and coming of age of three boys and a girl in contemporary small town Britain. The genius of the novel is that while it is told in multiple third person viewpoints, Joyce's sensibility seems to remain inside these children as they mature from childhood to the edge of adult-

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hood, growing and changing with them as they mature.

As does Sam's Tooth Fairy.

Nor does Joyce either sentimentalize what childhood is really like or particularly demonize the maturational and sexual angst of adolescence. Instead, he seems to remember what it really felt like to be a child and then an adolescent, and, by rendering it ruthlessly and clearly, causes the reader to remember it that way too, whether one shares much of the cultural or geographic specificity of his characters or not.

That opening line establishes it. Nice ordinary little kids do indeed commonly torture animals. Oh yes, they do. You *know* they do. Think back. Remember clearly and unsentimentally. *The Tooth Fairy* will help you.

Sam first encounters the Tooth Fairy in the usual manner. Sort of. He loses a baby tooth and puts it under his pillow so the Tooth Fairy will exchange it for a coin. Except he wakes up when the Tooth Fairy arrives and he sees the creature. Which he's not supposed to. And the creature is something out of a *real* fairy tale, that is, the original unexpurgated Grimm version, which maybe your parents didn't really want you to read at a tender age either. And the Tooth Fairy is pissed off. And scary. And dangerous.

And so it goes.

No one but Sam can see the Tooth Fairy. The Tooth Fairy haunts him all the way through childhood and into adolescence, only finally leaving him at the edge of maturity via a rather touching act of sexual magic.

Oh yes, the Tooth Fairy *fucks* Sam when the pubescent juices start to flow, or rather Sam fucks the Tooth Fairy, who mutates continually, sometimes male, sometimes female, sometimes alluring, sometimes loathsome, sometimes fighting his battles for him, sometimes messing him up.

What does the Tooth Fairy stand for symbolically? Too facile to say awakening sexuality and leave it at that. Childhood innocence? Hardly. If the novel demonstrates anything, it's that childhood innocence is an adult-created myth, as children know all too well at the time. Its opposite? Maybe. All of the above and more? No doubt.

Aside from the Tooth Fairy, which only one viewpoint character, Sam, can see, this is an entirely realistic novel of growing up in contemporary small town Britain. It's basically the story of three boys who are friends and end up in competition for the same girl who is a member of their little "gang of four." They do the ordinary things kids do—torture animals, smoke dope, blow things up, lose limbs, have sex, watch their slightly older town princess win a beauty contest and go to London where she becomes a serious drug addict, seemingly commit a murder together, the usual stuff.

Oh yes it is.

Since Sam's Tooth Fairy is the only fantastic intrusion into an otherwise realistic contemporary novel of growing up, published, at least in the US, in an SF line, it would be tempting to suppose that Joyce injected this element to make the novel more marketable.

Tempting, but wrong.

Somehow, in some strange way, the Tooth Fairy is a kind of realistic element, or rather a magic realist element, a reminder of what really lurks below the veneer of supposed childhood innocence, of what children really do know about the world, of what they do really do, of what really does motivate them, the sort of things that the adults they eventually become manage to forget by subconscious acts of will when confronting their own little darlings.

Somehow, I think, without the Tooth Fairy, many of the events of

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the rest of the novel, the explosions and maimings and near buggery and murder, might come across to an adult readership—and *The Tooth Fairy* is most definitely written for adults—as unrealistically extreme, or at least adults would be able to persuade themselves that this isn't really what growing up is like.

Children, of course, are not nearly so naive.

Sophisticated idiosyncratic contemporary fantasy seems to be where much of the cutting edge work in the extended SF genre is taking place these days, perhaps because the visionary future-oriented viewpoint has been flagging in the culture at large.

Indeed, there may be a negative feedback loop at work, in which the lack of cultural confidence in an evolutionarily positive future results in an attenuation of the true speculative impulse in the literature of science fiction, and the dearth of visionary science fiction drains the general cultural atmosphere of visionary energy.

Be that as it may, there certainly seems to be a lot more speculative energy these days behind using fantasy to reinvent the present or the past than using science fiction to invent the future. Speculative fiction of late seems to be getting more and more retro.

Symptomatic of this trend, perhaps, is Harvey Jacobs' *American Goliath*. Jacobs, though an excellent writer of speculative fiction who has been active for a long time, has not been what you could call prolific, but down through the years his métier has pretty much been the contemporary urban fantasy or near-future science fiction.

American Goliath, however, is something else again, an historical novel with some fantasy elements, a species of what might be called magical historical surrealism.

Jacobs herein fictionalizes the true story of the Cardiff Giant, one of the great nineteenth century carny scams, in which a phony petrified fossil human was passed off on the rubes as an ancient inhabitant of America for some fun and no little profit.

Jacobs' research must have been exhaustive, and more, he has successfully used it to project his imagination backward and give us a full-blooded recreation of immediate post-Civil War America in general, and the New York City of the period in particular, that manages to be satirically humorous and realistic at the same time.

P.T. Barnum and General Tom Thumb are significant enough players herein to be viewpoint characters, though the main story is carried by George Hull, the "discoverer" of the phony giant, and various members of his family. The phony giant, in fact and in this fiction actually carved out of stone, is also given a sort of stream-of-consciousness viewpoint, as is Barnum's knock-off competitor.

The result is certainly strange, and for my money, only partially successful. Jacobs herein is at his best when he sticks to not *straight* but somewhat *bent* historical recreation, particularly of the New York of the period, colorful, funny, rich in sensual detail, and replete with amusing edgy characters, not only Barnum and Tom Thumb, but a fictional yellow journalist.

On this level, *American Goliath* is entirely successful. Bawdy, boozy, blowsy, earthy, rough-hewn baroque, pushed a bit over the larger-than-life edge for humor's sake, it somehow seems a truer recreation of the period and its spirit than more scrupulously earnest historical accuracy ever could be.

Then, too, the story of the Cardiff Giant scam itself, though true, cer-

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tainly has its surreal dimension, as somehow does the age itself, reeking of sawdust, horseshit, cigar smoke, whorehouse perfume, and the national carnival midway.

One questions, though, why the straightforwardly conventional fantasy elements—the stream of consciousness of the two competing phony giants, the impregnation by stone phallus, other odds and ends that seem somehow out of place—are there at all.

American Goliath might very well have been better as a straightforward piece of historical surrealism, the story of the Cardiff Giant being bizarre enough without the more conventional (though hardly conventionally written) fantasy frosting and the period itself ripe enough with extravagance to give off a fantastic atmosphere with just a little exaggeration.

For my money, this turning backward of the speculative imagination, this retro movement, seems to be a combination of flagging speculative imagination on the one hand and perhaps a commercial strategy by which writers of SF attempt to get historical novels published on the other.

The nadir of it all being so-called "steampunk," and perhaps its saddest manifestation being *The Difference Engine,* in which William Gibson and Bruce Sterling, the literary and theoretical creators of cyberpunk and cyberspace, collaborated on a quixotic and ultimately pointless attempt to create a clunky Victorian version of same using only gears and levers.

On the other hand, Tim Powers, who has often been identified with this hopefully abortive movement, is really a sui generis bird of a different and unique feather.

If Harvey Jacobs reaches back with a present-day speculative imagination to fantasize the past in *American Goliath* and "steampunk" like *The Difference Engine* attempts to create a retro version of the future therein using available technology (something Mark Twain did definitively in *A Connecticut Yankee in King Arthur's Court,* by the way), Powers, in *Expiration Date,* extracts characters from the past, chief among them the shade of Thomas Edison, to fantasize the present.

Well sort of.

Powers has written historical fantasy—*The Anubis Gates* and *The Stress of Her Regard,* for example—and science fiction of sorts early on, but his strongest, most interesting, and perhaps emerging as his most characteristic work, is this sort of thing.

This sort of thing?

Just what is "this sort of thing"?

One might almost call it "magical science fiction."

Or contrawise, "science fictional magic."

Powers' historical fantasies are exhaustively researched and therefore loaded with detail, but hardly what anyone in their right minds could call *accurate,* since it's all in the service of transmogrifying the past into something at least as speculatively bizarre as anything in visionary future-oriented science fiction.

But even in his historical fantasies, Powers treats his fantasy elements on the same sort of matter-of-fact level as anything else in his fictional universes, as more or less straight phenomonology, applying a kind of down-to-Earth science fictional attitude rather than a truly mystical sensibility or vision, a sort of neo-Campbellian systematic logic.

It's a kind of inverse of magic realism, in which fantastic events are treated on the same reality level as problems with the transmission of one's car or the junk food in a McDonald's.

And in *Expiration Date,* as in the previous *Last Call,* Powers does

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much the same thing only more so with the present. In *Last Call,* the main setting was contemporary Las Vegas, in *Expiration Date* it is Los Angeles.

Powers recreates contemporary Los Angeles with the characteristic attention to and density of detail of his historical fantasy, and here we can see that it's as much a matter of his powers of observation and description and telling choices of specific sensory imagery as scholarly research, since he's really lived there and then.

But in story and reality-level terms, he treats this realistically contemporary Los Angeles exactly as he would treat an historical period, filling it with magical occurrences, ghosties appropriate to the period, magical systems, spells, potions, and notions, precisely as if all this were as much a part of quotidian Los Angeles as smog and freeway traffic jams.

Of course, a case could be made that it *is,* that this sort of magical science fiction reality is what life in Los Angeles is really like, at least from the points of view of a good many of its inhabitants.

Perhaps that is indeed part of Powers' point herein, as he moves among street people and show biz hangers-on, brujas and sleazy TV impresarios and the shades of vanished religious carny-cult scam artists.

The central McGuffin being a species of spiritual vampirism rendered in relentlessly street-real terms as another form of drug trade—addicts and/or dealers sucking out souls, confining them in vials, dealing them, stealing them, honking them, getting high on them, ODing, going through withdrawal, and so forth.

Interestingly enough, the mighty spirit that Powers summons forth to combat this modern vampirism is one from the past, and a Campbellian sort of hero too; Thomas Alva Edison, whom, chez Powers (and given his rep for meticulous research I am inclined to believe him), dabbled in such "spiritualist" matters in life as if they could be "solved" by applying much the same pragmatic engineering techniques as inventing the light bulb or the phonograph.

And indeed, the battles leading up to and through the apotheosis take place in almost Vernian terms of circuits and breakers and energy-flows.

It's hard to predict what Tim Powers will do next, hopefully I suspect for Powers himself, for on the textual evidence, he really belongs to no identifiable movement, steampunk or otherwise. Indeed, his body of work, or indeed most of his individual novels, don't even really fit into any definable genre, science fiction, fantasy, historical, or so-called alternate history.

Perhaps this is because Powers doesn't perceive the literary universe or even the reality he inhabits in such categorical terms. And perhaps *that* sort of sensibility is the permanent locus of the edge of the envelope—the interfaces between the genres, or better yet, the literary quantum soup in which even such interfaces are non-existent.

Or not.

There are nine and sixty ways.

There are many paths.

Take the long strange trip of Damon Knight from his very first publication in 1945, a famous fanzine demolition of A.E. Van Vogt's *The World of Null A,* to a novel like *Humpty Dumpty* over half a century later.

Damon Knight has lived a long life in science fiction and contrawise the history of half a century of science fiction is written in the life of Damon Knight. There are writers who have been at it longer—Jack Williamson comes immediately to mind—but none who have continued to evolve

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through and with speculative fiction as Knight has.

Knight started, face it, as a callow fan, a hanger on, an inhabitant of a so-called "slan shack," an SF commune of the early 1940s. He sold a few stories, then became a Big Name Fan with his trashing of Van Vogt.

He became not merely an SF critic of note, but, along with James Blish, one of the main creators of credible science fiction criticism itself, and the field's foremost technical critic. This would lead to his creation of the Milford Science Fiction Writers Conferences in the 1950s (workshops for published professionals) and the later Clarion Writers Workshops (wherein published professionals run workshops for students) whose effect over the years on the field has been and continues to be enormous.

In the 1950s, Knight worked as an editor on some secondary science fiction magazines, but in the 1960s, he came into his own as an editor with the long-running *Orbit* series of original science fiction anthologies. This series not only established the original publication of short SF in books rather than magazines as a viable mode that became literarily central, but developed many of the authors who still dominate the form.

In 1965, Knight conceived the notion of the Science Fiction Writers of America, created the organization, became its first president, and even edited its publications on the side for a time.

A long career in science fiction.

A life in science fiction.

Of someone who writes science fiction, but who has otherwise had a long and distinguished career within its compass, who would be known as a significant figure even if he had never published a word of fiction.

In this, Damon Knight has not been entirely unique. There have been a few others—Terry Carr, James Blish, John W. Campbell, Frederik Pohl, for example—but with the exception of Pohl, none have been at it as long as Knight, and not even Pohl has had Knight's staying power and influence as critic, editor, teacher, and apparatchnik.

And more to the current point, I can't think of anyone who has undergone such a major literary evolution at the opening of his sixth decade as a writer of speculative fiction as Damon Knight has with novels like *Why Do Birds* and now *Humpty Dumpty*.

Knight was never a prolific producer of fiction, save perhaps for a certain period in the 1950s and into the 1960s, and was mostly noted for his short fiction, not his occasional novels. These stories tended to be mordant, sophisticated, well-written, frequently sociological commentary, often droll, but not what anyone could reasonably call formally or stylistically experimental. The novels tended to be "fix-ups" of stories and novelettes first published in magazines, and pretty much the same sort of thing.

Which is to say that in this incarnation, Damon Knight was an exemplar of the sort of writer of down-the-middle science fiction elegized at the beginning of this essay. Less productive than many, more sophisticated than most, a more polished literary craftsman, but still a teller of more or less conventional science fictional tales framed in more or less conventional forms and told in well-written but basically transparent prose.

Then Knight went into a long fallow period as a writer of fiction, partly writer's block, perhaps, partly concentration on his other careers as influential editor, critic, and teacher.

And partly a long, long pupation.

For in retrospect, with the publication of two new novels in the 1990s, that seems to have been what must have been going on, for with *Why Do Birds* and *Humpty Dumpty*, Damon

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Knight, in his sixth decade as a science fiction writer, has metamorphosed into quite a different species of literary artist.

To say that *Why Do Birds* is in some respects a conventional end of the world novel would be true, to say that in some respects it is another of Knight's mordant deconstructions of human assholery would also be true, but to say that it is a conventional novel with a conventional plot or a conventional denouement certainly would not be.

As I said in my review, *Why Do Birds* made me feel weirder for having read it. There's something really twisted about this novel, and deliberately so, as exemplified by the title, which seems to have no external or internal referent.

On the phenomenological surface, it's the story of one Ed Stone, alien abductee, or so he claims, whose mission it is to persuade the world to stack its entire population in suspended animation within a giant cube so that the aliens can take them safely away to some non-specific paradise when the Earth is destroyed by some non-specific disaster. He succeeds. People file into the cube in an orderly manner. After which, the Earth is destroyed and the aliens, who never appear on stage, whisk the cube away to wherever. Maybe.

Say what?

Indeed.

Stone succeeds because the aliens have gifted him with the power of total believability. The world proceeds to shut itself down and stack its population like cordwood in a logical manner and the bulk of the novel consists of a neo-Campbellian description of the logistical problems of this quixotic feat and how they are overcome.

This is not a farce. This is told with a more or less straight face. The effect is deeply disturbing, all the more so because it is achieved with such subtlety that one never quite knows exactly the nature of the effect Knight is after or quite how he achieves it.

But achieve it he does.

Worse or better still, Knight brings the whole thing to a denouement that is somehow formally and thematically satisfying, without revealing his aliens, and without even revealing what is really going to happen to all those billions of people in suspended animation. Or for that matter, making any sense of his title.

But *Why Do Birds* works anyway.

And it's pretty damn impossible to explain exactly why.

Nor, apparently, was *Why Do Birds* a one-off, for *Humpty Dumpty* follows much the same vector deeper and deeper into surrealism.

The full title is:

Humpty Dumpty
An Oval

Whatever that is supposed to mean—except of course, that Humpty Dumpty, being an egg, had to have been an oval, and the broken egg alluded to thereby is the reality of one Wellington Stout, fractured somehow by a non-fatal(?) bullet to the head in a Milan restaurant, and king's horses and king's men to the contrary, never put back together again in conventional story or phenomenological terms.

Nor is it remotely possible to describe the linear skein of events in *Humpty Dumpty* in such a manner. Stout is sucked down, down, down, into a whirlpool of imagistic realities, level after level inside each other, interpenetrating, melding into each other—aliens, rabbit holes, venues from his past, real and imagined, you name it, or try to.

Confusing? Elusive of meaning? On the edge of literary hebephrenia?

You bet!

And yet, like *Why Do Birds,* or even more so, somehow it works.

It works in part because Knight

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and Stout are pursuing real emotional vectors through this surrealistic bouillabaisse, vectors that we can understand on an emotional level if not a reality level, and so we can empathize with Stout even when we, and more often than not he, don't really know what's going on or why, where we are, or if we are really anywhere.

And it works because at some point hard to define, the whirlpool of realities sucking Stout down, down, down, would seem to reverse at least on some elusive moral and spiritual level, and there is the sense of Stout rising up through them instead, to a truly poignant, tragic yet heroic apotheosis that we more or less understand, vitiated a bit perhaps by Knight's injecting a bit of unconvincing transcendentalism at the very end as if slightly reluctant to have his readers bite down fully on his bitter existential bullet.

Great reams of this sort of stuff have been written by amateurs, poseurs, and otherwise successful literary artists under the influence of drugs, drink, excessive egoboo, or an exaggerated appreciation for the wonderfulness of their own being, and it easily enough degenerates into self-indulgent pseudo-Freudian formless bullshit and often enough has.

But Damon Knight is something else again. Not only does he enter these waters with a half-century of writing excellent transparent prose in the service of the mimetic tradition of down-the-middle science fiction under his belt, he does so as both the most formidable technical critic that tradition has produced and an experienced teacher of not so much the art as the *craft* of writing such fiction.

Knight succeeds with this sudden veer into surrealism at such a mature stage in his career precisely *because* he has made the move at such an advanced stage, *because* it is such a drastic evolution away from what he has done before, *because* what he has done and been before has paved the way for such a transformation.

For a half-century, Knight worked in the tradition of down-the-middle science fiction as critic and writer. For half a century, he championed careful craftsmanship in the writing of such stuff and hard-nosed and seamless logic in its conceptualization. For almost half a century, as a writer of it, he practiced what he preached.

And then, in the 1960s, at the Milford Conferences, in his editorship of the *Orbit* series, to an extent in the Clarion Workshops, he came in contact with, and even to some extent began to champion as an editor, new generations of speculative writers, with new theories of what speculative fiction could be and how it might be written—stylistic experimenters, formal innovators, literary spelunkers of inner space.

It's as if a meticulous master of Dutch realist painting, say, were brought forward by a time machine to confront the Cubists and Dadaists. He might hang around them for a while, maybe a long while, sussing it all out, absorbing the changes before trying his hand at it himself.

And then, would he not apply the craft and skill and tricks of the trade that he had learned in his previous incarnation as a mimetic realist to the new material?

There are those who would say that that is something like the evolution of Pablo Picasso. And certainly that of Salvador Dali.

And that of Surrealism itself, on its higher and more successful levels.

Visual or literary.

You can't teach an old dog new tricks?

Maybe, maybe not.

But Damon Knight has certainly proven that given time, and due reflection, and experience as a critic

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and teacher, and a long experience of careful craftsmanship, and an open mind, and exposure to new forms of material, an old dog can certainly teach *himself* how to use his old tricks to radically new creative ends.

And perform them with a balance and skill those whippersnappers can only envy if they are foolish and learn from if they wish to become wise.

Yes, a half century of science fiction's literary history can be read in the career of Damon Knight. Its beginnings as a pulp magazine popcult. Its self-shaping via fanzines and conventions and then its own serious critical literature. The evolution of its backbone in the form of sincere serious science fiction written in accessible transparent prose. The influences of the self-conscious attempts to improve the literature and craft by the peer-group Milford Conferences of the 1950s and 1960s. The attempts of established writers to teach what they had learned to new generations in the ongoing Clarion Workshops. The stylistic and formal and contentwise winds of change of the New Wave and its literary successors.

All that SF has been and may yet become. A long, sometimes silly, sometimes grand, alternate literary tradition that has struggled up out of a sea of adolescent pulp to evolve, panting and still struggling forward, toward its still problematic maturity.

All that science fiction has been.

And can become.

Or not.

All that is now in danger of being lost.

On the plaque affixed to the Voyager probe that has left the solar system for parts and civilizations unknown is a greeting and a promise from the peoples of the Earth attributed to Carl Sagan:

"To learn if we are fortunate, to teach if we are called upon to teach."

Damon Knight has been fortunate.

And so have we.

He has done both. ●

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APRIL 1998

24–26—**To Be ConTinued.** For info, write: **Box 11231, South Bend IN 46634.** Or phone: **(219) 272-7499** (10 AM to 10 PM, not collect). Con will be held in: South Bend IN (if city omitted, same as in address) at the Ramada Inn. Guests will include: SF/fantasy folksinger Michael (Moonwulf) Longcor. The debut year of a new convention.

24–26—**ReinConation. (508) 775-0928.** Radisson Hotel, Hyannis MA. *No more news on this at press time.*

MAY 1998

1–3—**MarCon. (614) 475-8181.** Hyatt, Columbus OH. Bujold, R. Wood, Tom Burns, Schwartz, M. Asplundh-Faith.

1–3—**DisClave.** Holiday Inn, College Park MD (near Washington DC). Terry Bisson, Gene Wolfe, N. Jainschigg.

1–3—**DemiCon. (515) 224-7654.** Inn at University, Des Moines IA. S. & J. Robinson, Hodgson, M. & D. Willis.

1–3—**RocKon. (501) 224-8771.** Hilton, Little Rock AR. Elrod, J. Murray, Myhr, L. Singleton, Connolly, Hughes.

1–3—**Magic Carpet Con. (423) 344-9465.** Radisson Read House, Chattanooga TN. Moon, Elmore, J. Baen, Suttons.

7–10—**World Horror Con, Box 61565, Phoenix AZ 85082. (602) 941-3438.** Embassy Suites North. Lumley, Powers.

15–17—**Oasis, Box 940992, Maitland FL 32794. (407) 263-5822.** Radisson, Orlando FL. Larry Niven, Ben Bova.

15–17—**ConDuit, Box 11745, Salt Lake City UT 84147. (801) 273-0443, (801) 776–1064.** Airport Hilton. David Brin.

15–17—**KeyCon, Box 3178, Winnipeg MB R3C 4E6. (E-mail) cdant@awnet.com.** Ramada Marlborough. Rusch, Freas.

15–17—**VCon, 4683 Arbutus #316, Vancouver BC V6J 4A3. (604) 261-4895.** Surrey Inn, Surrey BC. D. Gerrold.

22–24—**ConQuest, Box 36212, Kansas City MO 64171. (913) 768-0779.** Park Place Hotel. Jeter, Burdak, G. Burton.

22–24—**MisCon, Box 9363, Missoula MT 59807. (406) 543-5058.** D. Barr, Ann Peters, H. Alexander, Steve Jackson.

22–24—**AgamemCon, 24161–H Hollyoak, Laguna Hills CA 92656. (714) 643-8352.** Hilton, Burbank CA. Babylon 5.

22–25—**MediaWestCon, 200 E. Thomas, Lansing MI 48906. (AOL) mdiawstcon.** Advance registration only. Media fanzines.

22–25—**WisCon, Box 1624, Madison WI 52701. (608) 233-8850.** Concourse Hotel. Four days of feminism and SF.

JUNE 1998

5–7—**Ad Astra, Box 7276, Stn. A, Toronto ON M5W 1X9. (E-mail) redbeard@yorku.ca.** Radisson E., Don Valley ON.

5–7—**TachyCon, Box 3382, Winter Park FL 32790. (407) 628-1454.** Adams Mark, Orlando FL. Doyle, Byers, Roen.

AUGUST 1998

5–9—**BucCONeer, Box 314, Annapolis Junction MD 20701. (410) 534-8136.** Baltimore MD. WorldCon. $130 to 6/15.

AUGUST 1999

26–29—**Conucopia, Box 8442, Van Nuys CA 91409.** Anaheim CA. Pournelle. No. American SF Con (NASFiC). $70.

SEPTEMBER 1999

2–6—**AussieCon 3, Box 266, Prospect Heights IL 60070.** Melbourne Australia. Greg Benford. WorldCon. US $155.

AUGUST 2000

31–Sep. 4—**ChiCon 2000, Box 642057, Chicago IL 60664.** Bova, Eggleton, Baen, Turtledove. WorldCon. $125.

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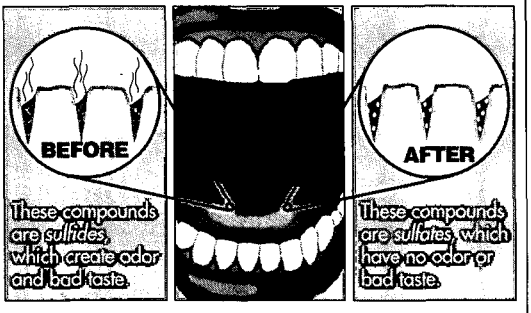
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These compounds are sulfides, which create odor and bad taste.
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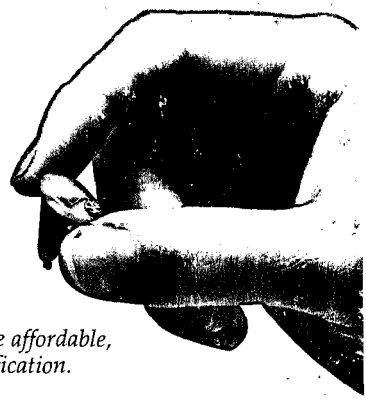

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One day a friend asked my wife Jill if I had a hearing aid. "He certainly does," replied Jill, "Me!" After hearing about a remarkable new product, Jill finally got up the nerve to ask me if I'd ever thought about getting a hearing aid. "No way," I said. "It would make me look 20 years older and cost a fortune." "No, no," she replied. "This is entirely different. It's not a hearing aid...it's Crystal Ear!"

No one will know. Jill was right. Crystal Ear is different—not the bulky, old-styled body-worn or over-the-ear aid, but an advanced personal sound system so small it's like contacts for your ears. You will hear sounds your ears have been missing for years. Crystal Ear will make speech louder, and the sound is pure and natural.

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"My father spent over $5000 on another brand. I showed him my Crystal Ear, he tried it, and he decided it worked better than his brand, even though it was a...fraction of the cost!"

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It is smaller than the tip of my little finger and it's almost invisible when worn. Put it in your ear and its ready-to-wear mold fits comfortably. Since it's not too loud or too tight, you may even forget that you're wearing it!

A fraction of the price. Hearing loss is the world's number-one health problem, but in most cases it goes completely untreated. For many millions of people, hearing devices are way too expensive, and the retail middlemen want to keep it that way. What's more, treating hearing loss the old retail way can involve numerous office visits, expensive testing and adjustments to fit your ear. Thanks to Crystal Ear, the "sound solution" is now affordable and convenient. Almost 90% of people with mild hearing loss, and millions more with just a little hearing dropoff, can be dramatically helped with Crystal Ear. Plus, its superior design is energy-efficient, so batteries can last months, not just weeks.

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